THE NEW SCHOLASTICISM

A QUARTERLY REVIEW OF PHILOSOPHY

APRIL, 1935

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EDITED BY

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SIR ISAAC NEWTON'S FORMAL CONCEPTION OF SCIENTIFIC METHOD

OF the early followers of Newton who wrote introductions to his philosophy it has been observed that they especially esteemed and emphasized the Newtonian experimental method.[1] Therein lay the strength of Newton's genius.[2] By it he seemed to them to have shown the only true method of obtaining valid scientific results.

As an instance, Roger Cotes, first Plumian Professor of Astronomy and Experimental Philosophy at Trinity College, in whose hands both Bentley and Newton placed the reëditing of the *Principia*,[3] described Newton's method in his preface to the second edition as "this most excellent method of philosophy which is founded on experiments and observations." The laws

[1] Cf. M. S. Kuypers, *Studies in the Eighteenth Century Background of Hume's Empiricism* (Minneapolis, 1930), pp. 7, 14-15. For a practically exhaustive Newton bibliography see: G. J. Gray, *A Bibliography of the Works of Sir Isaac Newton*, 2nd ed. (Cambridge, 1907). H. Zeitlinger, "A Newton Bibliography," *Sir Isaac Newton 1642-1727*, ed. W. J. Greenstreet (London, 1927), pp. 148-170.

[2] W.-J. s'Gravesande, *Mathematical Elements of Natural Philosophy . . . , or An Introduction to Sir Isaac Newton's Philosophy*, transl. by J. T. Desaguliers, 2 vols., 6th ed. (London, 1747), Preface to the Third Edition, p. xv.

[3] I. Newton, *Philosophiae Naturalis Principia Mathematica* (London, 1687), 2nd ed. 1713; 3rd ed. 1726.

of nature were not to be sought "from uncertain conjectures," but "from observations and experiments." And of those who practise the experimental method Cotes wrote that they

> derive the causes of all things from the most simple principles possible; but then they assume nothing as a principle, that is not proved by phenomena. They frame no hypotheses, nor receive them into philosophy otherwise than as questions whose truth may be disputed. They proceed therefore in a twofold method, synthetical and analytical. From some select phenomena they deduce by analysis the forces of Nature and the more simple laws of forces; and from thence by synthesis show the constitution of the rest. This is that incomparably best method of philosophising, which our renowned author most justly embraced in preference to the rest. . . .[4]

Again in the case of W.-J. s'Gravesande it was not because his *Physices Elementa Mathematica . . . Sive Introductio ad Philosophiam Newtonianam*[5] set forth the Newtonian system, as its subtitle suggests, that he so entitled his work. Beyond the fact that many things in his book were illustrated by the works of Newton, or tended to make these more easily understood, s'Gravesande followed the Newtonian method. He believed it to be the only true one. He attempted therefore in his preface and first chapter to set down briefly just what Newton's experimental method of discovery and illustration was:

> In Physics then we are to discover the Laws of Nature by the Phe-

[4] I. Newton, *Sir Isaac Newton's Mathematical Principles of Natural Philosophy . . .*, Motte's translations revised by F. Cajori (Berkeley, 1934), pp. xx, xxxii. Henry Pemberton, whom Newton chose to edit the third edition of the *Principia*, also placed especial emphasis on the Newtonian method. Cf. Henry Pemberton, *A View of Sir Isaac Newton's Philosophy* (London, 1728), especially pp. 13-14 and 24-26 in the "Introduction concerning Sir Isaac Newton's method of reasoning in philosophy." "Method of philosophy" usually meant method of physical science or scientific method. Cf. L. S. Stebbing, *A Modern Introduction to Logic* (London, 1930), p. 311, note 3.

[5] W.-J. s'Gravesande, *Physices Elementa Mathematica, experimentis confirmata. Sive Introductio ad Philosophiam Newtonianam*, 2 vols. (Leyden, 1720-21).

nomena, then by Induction prove them to be general Laws; all the rest is to be handled mathematically.[6]

He only, who in Physics reasons from Phenomena, rejecting all feign'd Hypotheses, and pursues this Method inviolably to the best of his Power, endeavours to follow the Steps of Sir Isaac Newton, *and very justly declares that he is a* Newtonian *Philosopher. . . .*[7]

Colin Maclaurin, Newton's "ablest contemporary expositor,"[8] and elected to the Professorship of Mathematics at the University of Edinburgh through Newton's influence, said of him that he "used to call his philosophy *experimental philosophy*" to distinguish it from systems which were "the product of genius and invention only." Newton "did not set out with any favourite principle or supposition, never proposing to himself the invention of a system." He "saw that it was necessary to consult nature herself, to attend carefully to her manifest operations, and to extort her secrets from her by well-chosen and repeated experiments." It was his policy to "admit no objections against plain experience from metaphysical considerations;" "to give nothing for demonstration but what must ever be found such." Newton "knew where to stop when experiments were wanting and when the subtility of nature carried things out of his reach." Things which he was not able to establish with certainty he proposed "under the modest title of queries."[9]

We may quote here as an introduction to Newton's own statements on method Maclaurin's excellent summary of 'the incomparable philosopher's' views on the respective roles of analysis and synthesis:[10]

[6] W.-J. s'Gravesande, *Mathematical Elements of Natural Philosophy . . .*, Pref. to the Third Edition, p. viii.

[7] *Ibid.*, To the Reader Concerning the Second Edition, p. xi.

[8] Cf. L. T. More, *Isaac Newton* (New York and London, 1934), p. 657.

[9] Colin Maclaurin, *An Account of Sir Isaac Newton's Philosophical Discoveries*, 3rd ed. (London, 1775), pp. 6-10, *passim*.

[10] Cf. William Whewell, *On the Philosophy of Discovery* (London, 1860), p. 184. Newton's distinct stress of the two methods of analysis and synthesis marked certain very important steps in scientific research which his predecessors had not clearly pointed out.

In order to proceed with perfect security, and to put an end for ever to disputes, he proposed that, in our inquiries into nature, the methods of *analysis* and *synthesis* should be both employed in a proper order; that we should begin with the phenomena, or effects, and from them investigate the powers or causes that operate in nature; that, from particular causes, we should proceed to the more general ones, till the argument end in the most general: this is the method of *analysis*. Being once possest of these causes, we should then descend in a contrary order; and from them, as established principles, explain all the phenomena that are their consequences, and prove our explications: and this is the *synthesis*. It is evident that, as in mathematics, so in natural philosophy, the investigation of difficult things by the method of *analysis* ought ever to precede the method of composition, or the *synthesis*.[11]

In his preface to the first edition of the *Principia* Newton stated his opinion that a complete and satisfactory scientific method is both inductive and deductive. He said:

the whole burden of philosophy seems to consist in this—from the phenomena of motions to investigate the forces of nature, and then from these forces to demonstrate the other phenomena. . . .[12]

He wrote at greater length on this twofold aspect of genuine scientific method in the second edition of the *Opticks*:

As in Mathematicks, so in Natural Philosophy, the Investigation of difficult Things by the Method of Analysis, ought ever to precede the Method of Composition. This Analysis consists in making Experiments and Observations, and in drawing General Conclusions from them by Induction. . . .[13]

The true method of investigation is by way of analysis and synthesis:

By this way of Analysis we may proceed from Compounds to Ingredients and from Motions to the Forces producing them; and in general,

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[11] C. Maclaurin, *op. cit.*, p. 9.

[12] I. Newton, *op. cit.*, p. xvii.

[13] I. Newton, *Opticks*, reprinted from the 4th ed. (London, 1931), Query 31, p. 404. 1st ed. 1704; a Latin ed. 1706; 2nd ed. 1717.

from Effects to their Causes, and from particular Causes to more general ones, till the Argument end in the most general.[14]

He continued:

Synthesis consists in assuming the Causes discover'd, and establish'd as Principles, and by them explaining the Phenomena proceeding from them, and proving the Explanations.[15]

How he himself used this analytico-synthetic method of investigation both in the *Principia* and in the *Opticks* Newton has indicated. He wrote in his preface to the first edition of the *Principia*:

In the third Book . . . by the propositions mathematically demonstrated in the former Books, . . . I derive from the celestial phenomena the forces of gravity with which bodies tend to the sun and the several planets. Then from these forces, by other propositions which are also mathematical, I deduce the motions of the planets, the comets, the moon, and the sea.[16]

And again in the last Query of the *Opticks*:

In the first two Books of these Opticks, I proceeded by this Analysis to discover and prove the original Differences. . . . And these Discoveries being proved, may be assumed in the Method of Composition for explaining the Phaenomena arising from them. An Instance of which Method I gave in the End of the first Book.[17]

In any such attempt as this to ascertain Newton's formal conception of method, account must be taken of his life-long disdain for explicit formulation, explanation, or even revelation of his methods. The *Principia* he is said to have so revised before publication as deliberately to conceal the methods used in its elaboration. It is an historical fact that he even had to be goaded into publishing the great work itself. Nor is there any

[14] *Ibid., loc. cit.*
[15] *Ibid.*, p. 405.
[16] I. Newton, *Mathematical Principles . . .*, p. xviii.
[17] I. Newton, *Opticks*, Query 31, p. 405.

doubt that an early explicit formulation and revelation of his method of fluxions would have forstalled much subsequent useless controversy. More precisely, almost all of the passages in Newton having explicitly to do with method, such as the " Regulae Philosophandi," the famous General Scholium added to the third book of the *Principia*, Queries twenty-eight and thirty-one of the *Opticks*, and his letters to Father Pardies were later additions to his already published works, and their composition primarily due to the exigencies of controversy.

Quite unlike Bacon, therefore, Newton may be thought to have contributed more by his practise to the development of scientific method than by his formal pronouncements on method.[18] There is no doubt Newton practised all in the way of method that he preached. And it is universally recognised he did not preach all the methodology that he practised. He is for Einstein,

> this shining spirit, who pointed out, as none before or after him did, the path of Western thought and research and practical construction. . . . not only an inventor of genius in respect of particular guiding methods; he also showed a unique mastery of the empirical material known in his time. . . .[19]

Evidently for a definitive statement of Newton's conception of method his formal remarks will have to be supplemented by a careful and minute study not only of his use of experiment to establish the scientific conclusions set forth in his published

[18] Cf. L. T. More, *op. cit.*, p. 497: "There is no doubt that Newton was greatly influenced by Bacon in his adoption of the experimental and mechanistic philosophy, and by his exclusion of hypotheses from science." Cf. also pp. 48, 180. Cf. C. Maclaurin, *op. cit.*, pp. 59-60; H. Pemberton, *op. cit.*, pp. 1-26; Léon Bloch, *La Philosophie de Newton* (Paris, 1908), pp. 421, 423, 437. Brewster seems to have been responsible for the contrary opinion. Cf. Sir David Brewster, *Memoirs of the Life, Writings, and Discoveries of Sir Isaac Newton*, 2 vols. (Edinburgh and Boston, 1855), II, p. 403.

[19] Albert Einstein, " Isaac Newton," *Annual Report of the Smithsonian Institution, 1927* (Reprinted from the Manchester *Guardian*, March 19, 1927), pp. 201-207, p. 201.

works, but also of the use he constantly made of mathematics to demonstrate and formulate these conclusions.[20] Still, as is already evident in part, Newton has made a number of explicit and formal statements on scientific method. Even aside from the fact of his authorship, their intrinsic value makes them worthy of study and of an attempt at synthesis.

For instance, in the opening paragraph of *A Scheme for Establishing the Royal Society*, found by Brewster among Newton's papers in the Portsmouth Collection, Newton distinguished between the establishment of the laws of phenomena from observation and experiment, and the discovery of the causes of phenomena:

> Natural Philosophy consists in discovering the frame and operations of Nature, and reducing them, as far as may be, to general Rules or Laws,—establishing these rules by observations and experiments, and thence deducing the causes and effects of things. . . .[21]

Determination of the laws of phenomena should precede inquiry into their causes:

> For we must learn from the Phaenomena of Nature what Bodies attract one another, and what are the Laws and Properties of the Attraction, before we enquire the Cause by which the Attraction is perform'd.[22]

And although the causes of phenomena be not yet discovered, the accurate formulation of the laws of phenomena or their properties is a valuable and important step in scientific method.[23]

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[20] Cf. E. A. Burtt, *The Metaphysics of Sir Isaac Newton* (London and New York, 1925), p. 218.

[21] Cf. Brewster, *op. cit.*, I, p. 102. According to Professor Challis, a very proper distinction between the experimental and theoretical departments of natural science. Challis, "On Newton's 'Foundation of all Philosophy,'" *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science*, XXVI (1863), pp. 280-292, p. 287.

[22] I. Newton, *Opticks*, Query 31, p. 376.

[23] The importance and value of this distinction had never before been "so strongly and clearly stated, till Newton both repeatedly promulgated the precept, and added to it the weight of the most striking examples." Whewell, *op. cit.*, p. 199.

About 1712 Newton wrote of the theory of gravity that it is

> proved by mathematical demonstration, grounded upon experiments and the phenomena of nature; and that to understand the motion of the planets under the influence of gravity, without knowing the cause of gravity, is as good a progress in philosophy as to understand the frame of a clock, and the dependence of the wheels upon one another, without knowing the cause of the gravity of the weight which moves the machine, is in the philosophy of clockwork. . . .[24]

He later added a similar and more general statement to the *Opticks*:

> But to derive two or three general Principles of Motion from Phenomena, and afterwards to tell us how the Properties and Actions of all corporeal Things follow from those manifest Principles, would be a very great step in Philosophy, though the Causes of those Principles were not yet discover'd: And therefore I scruple not to propose the Principles of Motion above mention'd, they being of very general Extent, and leave their Causes to be found out.[25]

As is evident, Newton did not identify laws and causes. To assert therefore, as is sometimes done, that for him science was merely explanatory, is to project into his thought a fancy only more recently entertained.[26] The discovery of causes was in Newton's eyes not only possible and useful, but the prime concern of science. And science was to be valued because it brought men to a knowledge of God, the First Cause:

> Whereas the main Business of natural Philosophy is to argue from Phenomena without feigning Hypotheses, and to deduce Causes from

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[24] Cf. Brewster, *op. cit.*, II, p. 283. An extract from Newton's unpublished answer to "some things reflecting upon the English" in a public letter of Leibnitz, 1672.

[25] I. Newton, *Opticks*, Query 31, pp. 401-402. In the same Query Newton mentions "certain active Principles, such as that of Gravity," which he considers, "as general Laws of Nature, . . . their Truth appearing to us by Phenomena, though their Causes be not yet discover'd." p. 401.

[26] Cf. Léon Bloch, *op. cit.*, p. 453. Also G. Milhaud, "La Philosophie de Newton, par M. L. Bloch," *Revue de Métaphysique et de Morale*, XVI (1908), pp. 492-506, p. 497.

Effects, till we come to the very first Cause, which certainly is not mechanical. . . .[27]

And though every true Step made in this Philosophy brings us not immediately to the Knowledge of the first Cause, yet it brings us nearer to it, and on that account is to be highly valued.[28]

How much of a "thoroughgoing empiricist"[29] was Newton? Was his method on the whole "a practically achieved but scarcely rationally defined, empiricism?"[30] Before these questions be answered in the affirmative his explicit remarks on the function and value of experience, or rather experiment, are worthy of review. In answer to some animadversions of Father Ignace Pardies on his recently published new theory of light, Newton wrote:

You know that the proper method for inquiring after the properties of things, is to deduce them from experiments. And I told you that the theory which I propounded was evinced to me . . . by deriving it from experiments concluding positively and directly. The way therefore to examine it is by considering, whether the experiments which I propose do prove those parts of the theory to which they are applied; or by prosecuting other experiments which the theory may suggest for its examination.[31]

After having proposed a series of questions, or leads to be verified by experiments,—really the main points of his theory put in interrogative form—Newton concluded: "To determine by

[27] I. Newton, *Opticks*, Query 28, p. 369. Cf. Query 31, pp. 402-405 *passim*. Elsie C. Graham in her doctoral thesis done at Columbia suggests that had Sir Isaac Newton possessed an unbiased mind, been more "tough-minded," he would have been less credulous of his "watchmaker God" and intelligible universe. E. C. Graham, *Opticks and Vision: The Background of the Metaphysics of Berkeley* (privately printed, 1929), pp. 68-69.

[28] I. Newton, *Opticks*, Query 28, p. 370.

[29] E. A. Burtt, *op. cit.*, p. 208.

[30] A. E. Heath, "Newton's Influence on Method in the Physical Sciences," *Sir Isaac Newton 1642-1727*, ed. W. J. Greenstreet (London, 1927), pp. 130-133, p. 132.

[31] Hutton, Shaw, Pearson, *The Philosophical Transactions of the Royal Society of London . . . Abridged . . .*, vols. I, II (London, 1809), I, p. 734.

experiments these, and such like quaeries, which involve the propounded theory, seems the most proper and direct way to conclusion." [32] Newton was equally explicit in another letter to the same critic:

> the best and safest method of philosophizing seems to be, first to inquire diligently into the properties of things, and establishing those properties by experiments. . . .[33]

With regard to the number of experiments necessary to establish a theory Newton was of the opinion that, " it is not number of experiments but weight to be regarded; and where one will do, what need many? " [34] For that reason, perhaps, he chose in his first letter to the Royal Society apparently to rest his new theory of light on an " experimentum crucis," and to give only " an instance or two of the experiments " on the origin of colours, " as a specimen of the rest." [35]

No proposition should be advanced as a theory which was not proved by experiments. Therefore he cautioned his readers in an Advertisement to the first edition of the *Opticks* to regard as imperfect any other papers on the subject which may have got out of his hands; for they were perhaps written before he had tried all the experiments, and had fully satisfied himself about the laws.[36] In an Advertisement to the second edition he called his readers' attention to the fact of his having added to the

[32] *Ibid.*, I, p. 735.

[33] *Ibid.*, I, p. 740. Newton's *Opticks* begins with another very clear statement of his method: " My design in this Book is not to explain the Properties of Light by Hypotheses, but to propose and prove them by Reason and Experiments." p. 1.

[34] Hutton, Shaw, Pearson, *op. cit.*, II, p. 341.

[35] *Ibid.*, I, pp. 678-688. s'Gravesande remarked in a preface to the third edition of his work that the experiments of Newton had a kind of connection with one another, so that from one experiment Newton was able with great subtility to deduce what was to be the next. W.-J. s'Gravesande, *Mathematical Elements of Natural Philosophy* . . ., p. xv. Cf. Léon Bloch, *op. cit.*, p. 433.

[36] I. Newton, *Opticks*, p. xxvii.

body of the work one question on the cause of gravity, and of his having chosen to propose it by way of a question because he was not yet satisfied about it for want of experiments.[37] Again Newton appended to the *Opticks* thirty-one Queries—propositions for others to establish more surely by such observations and experiments as he himself had not yet had a chance to accomplish satisfactorily.[38]

Moreover not only were experiments necessary to prove a theory, he told Fr. Pardies, but "they must render all objections invalid."[39] Newton proposed to admit no objections against his conclusions, "but such as are taken from Experiments, or other certain Truths."[40] But could Christian Huygens "show by experiments" how any original colour might be derived from yellow or blue, Newton wrote, "I will acknowledge myself in an error."[41]

As a final instance of Newton's conviction of the value of experiment we may quote his answer to Molyneux, who believed some observations of his to have utterly destroyed the Newtonian system, "there is no arguing against facts and experiments."[42] Here as elsewhere Newton shows familiarity with Scholastic thought and expression. His answer is the English of the axiom, *Contra factum non valet argumentum.*

When Newton sent his first scientific essay to the Royal Society in 1671, besides proposing a new theory about light and colour, he was also proposing for contemporary scientists a new method. By means of a few carefully chosen experiments set down there he disproved the accepted explanations of the refrac-

[37] *Ibid.*, p. xxix. With regard to a dense fluid, supposed to explain the motions of the planets and comets, Newton wrote, "there is no evidence for its Existence, and therefore it ought to be rejected." *Opticks*, Query 28, p. 368.

[38] *Ibid.*, pp. 338-406.

[39] Hutton, Shaw, Pearson, *op. cit.*, I, p. 735.

[40] I. Newton, *Opticks*, Query 31, p. 404.

[41] Hutton, Shaw, Pearson, *op. cit.*, II, p. 91.

[42] Cf. Brewster, *op. cit.*, II, p. 407, note.

tion of light, and proved his own—which explanations he summed up in three laws. Denials of these Newton expected to be based, not on supposed or possible hypotheses, but on experimental evidence which would give new facts or prove his own to be untrue. He wrote, for instance, in answer to some objections of Fr. Pardies:

> And therefore I could wish all objections were suspended, taken from hypotheses or any other heads than these two; of shewing the insufficiency of experiments to determine these queries,[43] or prove any other parts of my theory, by assigning the flaws and defects in my conclusions drawn from them; or of producing other experiments which directly contradict me, if any such may seem to occur." [44]

Possible explanations of phenomena—hypotheses—were no efficient criterion of truth, even if it were possible in a particular instance for all possibilities to be enumerated:

> Give me leave, Sir, to insinuate that I cannot think it effectual for determining truth, to examine the several ways by which phenomena may be explained, unless where there can be a perfect enumeration of all those ways.[45]

> For if the possibility of hypotheses is to be the test of truth and reality of things, I see not how certainty can be obtained in any science; since numerous hypotheses may be devised, which shall seem to overcome new difficulties.[46]

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[43] The queries Newton proposed and referred to here were truths he had already established by experiments in his letter on a new theory of light and colours. He was now putting them in question form to assist Fr. Pardies in performing the experiments necessary for their verification. Cf. Brewster, *op. cit.*, I, p. 79. It is also worthy of note that the three queries Newton proposed in his answer to Hooke were for him more than open questions. He spoke of the third as, "certainly beyond all doubt." Hutton, Shaw, Pearson, *op. cit.*, II, p. 24. The propositions implied in the Queries of the *Opticks* however, Newton stated expressly, were in need of further verification. *Opticks*, p. 338.

[44] Hutton, Shaw, Pearson, *op. cit.*, I, p. 735.

[45] *Ibid.*, I, p. 734.

[46] *Ibid.*, I, p. 740.

Nevertheless even as late as 1686,[47] though ever adverse to the introduction into science of suppositions,[48] or hypotheses, as proofs or established truths, Newton admitted and actually used hypotheses as an aid in explanation and illustration. After establishing the properties of things by experiments one might proceed "slowly to hypotheses for the explanation of them."[49] "Hypotheses should be subservient only in explaining the properties of things, but not assumed in determining them. . . ."[50] In a letter to Oldenburg in 1676, given by Brewster, Newton wrote that inasmuch as an hypothesis would illustrate the papers he had promised to send, he had not scrupled to describe one. He did not concern himself whether it should be thought probable or improbable as long as it rendered the paper he was sending, and others he had sent previously, more intelligible.[51] Along with Newton's letter to Oldenburg went the papers: *A Theory of Light and Colours, containing partly an Hypothesis to explain the properties of light discovered by him in his former papers.* . . .[52] Newton was proposing this hypothesis because

[47] Newton in a letter to Halley, defending himself against Hooke's exaggerated claims, spoke of the hypothesis he had sent Oldenburg in 1675 (cf. n. 52, *infra.*) as one of his explanatory guesses, upon which he did not rely. Cf. Brewster, *op. cit.*, I, pp. 439-445, p. 445

[48] In an answer to Hooke, Newton quite explicitly distinguished between a positively established fact, a plausible consequence, and a fundamental supposition:

"It is true that from my theory I argue the corporeity of light; but I do it without any absolute positiveness, as the word perhaps intimates; and make of it at most but a very plausible consequence of the doctrine, and not a fundamental supposition. . . ." Hutton, Shaw, Pearson, *op. cit.*, II, pp. 15-16.

[49] *Ibid.*, I, p. 740.

[50] *Ibid., loc. cit.* Newton adds here that hypotheses may be assumed "so far as they furnish experiments." Note may also be made of s'Gravesande's resolve "to illustrate every thing by experiment . . . following therein the example of the English." s'Gravesande said he was following the Newtonian method. *Mathematical Elements of Natural Philosophy* . . . , Preface to the First Edition, pp. viii-ix.

[51] Cf. Brewster, *op. cit.*, I, pp. 132-134.

[52] For the paper: *An Hypothesis explaining the properties of light discoursed of in my several papers.* Cf. Brewster, *op. cit.*, I, pp. 390-409.

he had "observed the heads of some great virtuoses to run much upon hypotheses." [53] Because he could not make them understand when he spoke of the nature of light abstractly he would illustrate his discourse by an hypothesis. But Newton warned his readers that he "shall not assume this or any other hypothesis." [53] And even though for convenience he should speak of it as assumed, let no man confound this hypothesis with his other discourses, "or measure the certainty [54] of one by the other." [53]

Newton was evidently not absolutely opposed to explanatory hypotheses, nor to those of a purely suggestive or heuristic nature. He cannot be conceived to have forbid private speculation.[55] However, any suppositions or hypotheses of a sort, as he told Fr. Pardies, were to be judged of after the properties of things had been sufficiently explored by experiments, "and those to be rejected which cannot be reconciled with the phenomena." [56]

To the practise which had arisen "of calling by the name of hypothesis whatever is explained in philosophy," Newton took exception.[57] He was anxious "to prevent the prevalence of a term, which might be prejudicial to true philosophy." [57]

[53] *Ibid.*, I, pp. 390-391. Newton later, in 1679, illustrated and explained this hypothesis in a letter to Robert Boyle. He wrote in part:
"what I am not satisfied in, I can scarce esteem fit to be communicated to others; especially in Natural Philosophy, where there is no end of fancying. But because I am indebted to you. . . . It being only an explication of qualities which you desire of me, I shall set down my apprehensions in the form of suppositions. . . ." Cf. Brewster, *op. cit.*, I, pp. 409-419, p. 410.

[54] Again Newton had been very explicit in distinguishing certainty from conjecture in his first letter to the Royal Society: "I shall not mingle conjectures with certainties." Hutton, Shaw, Pearson, *op. cit.*, I, p. 687. More reports Conduitt's story that, when Newton in the last year of his life was asked by Conduitt why he did not publish as conjectures the conjectures he had just been making for the benefit of his nephew-in-law, Newton replied, "I do not deal in conjectures." Cf. L. T. More, *op. cit.*, p. 663.

[55] Cf. Léon Bloch, *op. cit.*, p. 479. L. T. More, *op. cit.*, p. 106. I. Newton, *Mathematical Principles* . . . , Appendix, pp. 671-676.

[56] Hutton, Shaw, Pearson, *op. cit.*, I, p. 742.

[57] *Ibid.*, I, p. 743.

Actually his fundamental attitude towards hypotheses had always been one of distrust and disdain. This attitude in the course of his controversies was to become definitely hostile. Of the properties of light discovered and proved in his famous letter of 1671, Newton wrote to Fr. Pardies in 1672 that he would rather have them "rejected as vain and empty speculation, than acknowledged even as an hypothesis." [58] He replied to Hooke in 1672 that if anyone doubted whiteness to be a mixture of all colours:

> it is better to put the event on further circumstances, of the experiment, than to acquiesce in the possibility of any hypothetical explication." [59]

Though he had admitted private speculation had its place as private speculation, though he had admitted suppositions might be a clue to experiment, and though fanciful illustrations and explanations were necessary for minds incapable of grasping true scientific methods and results, they were all only hypotheses. Whatever was not deduced from the phenomena was to be called an hypothesis.[60] And Newton would admit no hypotheses into the realm of science. Science was for him a body of facts established by experiment alone—truths. It was in regard to the cause of the properties of gravity that Newton made his often quoted remark: "I frame no hypotheses," but the dictum reveals his ultimate hostile state of mind.[61] In the same General Scholium, which he added to the *Principia* in 1713, Newton made this rejection of hypotheses even more emphatic:

> hypotheses, whether metaphysical or physical, whether of occult qualities or mechanical, have no place in experimental philosophy.[62]

And again in the thirty-first Query added to the original *Op-*

[58] *Ibid.*, I, p. 732.
[59] *Ibid.*, II, p. 24.
[60] I. Newton, *Mathematical Principles . . .*, General Scholium, p. 547.
[61] *Ibid.. loc. cit.*
[62] *Ibid., loc. cit.*

ticks: "Hypotheses are not to be regarded in experimental Philosophy." [63] As for objections drawn from hypotheses, Newton wrote in his third "regula philosophandi," inserted into the second edition of the *Principia*: "We are certainly not to relinquish the evidence of experiments for the sake of dreams and vain fictions of our own devising. . . ." [64] A final witness for Newton's ultimate hostility towards hypotheses is his fourth "regula philosophandi," added to the third edition of the *Principia* in 1726.[65] It is essentially a last polemic against hypotheses.

A further source of information for Newton's formal conception of method is his famous "regulae philosophandi." [66] As is already evident, Newton had in the course and in consequence of his controversies been forced into a good many explicit pronouncements on method. His rules, as well, were due to the exigencies of defending himself against actual and possible critics whose conception of scientific method was altogether of another sort than his own.[67] Intended as they were to support and protect the reasonings before which they stood, they should not be taken as constituting even in outline Newton's conception of a complete scientific method.[68] They do not enuntiate a universally applicable method of procedure.[69] As a matter of

[63] I. Newton, *Opticks*, Query 31, p. 404.

[64] I. Newton, *Mathematical Principles . . .*, Rules of Reasoning in Philosophy, p. 398.

[65] *Ibid.*, p. 400.

[66] Pemberton devoted three pages of his "Introduction concerning Sir Isaac Newton's method of reasoning in philosophy" to an explanation of these rules. *Op. cit.*, pp. 24-26. s'Gravesande in his first chapter quoted the first three rules as rules to be followed in the investigation of the laws of phenomena. When he wrote, Newton had not yet published the fourth rule. *Mathematical Elements of Natural Philosophy . . .*, p. 3.

[67] As has been noted, rules one to three were added to the second edition of the *Principia*. Much of what they have to say on method is also to be found in Queries twenty-eight and thirty-one of the *Opticks*, themselves later additions to the first edition of that work. Rule four was an addition to the third edition of the *Principia*.

[68] Cf. W. Whewell, *op. cit.*, pp. 186 ff.

[69] Cf. Léon Bloch, *op. cit.*, p. 450.

fact it is most probably true that Newton did not ever, not even in his own mind, formally elaborate a detailed methodology.[70]

While it is generally true that Newton did not attempt to prove his dicta on method, his "regulae philosophandi" were for him more than debatable, useless, and artificial generalities, more than conceded axioms of general philosophy.[71] It is a fact that they propose at least implicitly the Principles of Sufficient Reason, of Sufficient Causality, and the Uniformity of Nature. Newton's justification of this last principle, by an appeal to the necessary and competent testimony of the senses and the power of abstraction, suggests how simply and as almost self-evident he would have justified the other two. Reasoning as he did, and must, from common perceptions, his senses and power of abstraction testified that those parts of nature which he did know were uniform. By his power of abstraction he inferred that the uniformity was more general, and true of those parts of nature of which he did not, or could not, have the same amount of experience. The substantial validity of this testimony and inference was generally recognized, and was itself an intuition or a necessary postulate of thought and human activity.[72] For Thomas Reid, Newton's rules were but the "maxims of common sense," and to philosophize by any other

[70] Cf. E. A. Burtt, *op. cit.*, p. 204.

[71] For this opinion cf. J.-B. Biot, *Correspondance du chevalier Isaac Newton et du professeur Cotes . . . , Extraits du Journal des Savants* (published separately, 1852), p. 18.

[72] Professor Challis interpreted Newton's statement in the third rule, "And this is the foundation of all philosophy," to mean substantially that: "It is the very essence of philosophy to rest upon the foundation of common perceptions, and by reasoning from these to account for phenomena." Challis, *op. cit.*, p. 285. Newton seems to us, however, to mean that the Principle of the Uniformity of Nature is "the foundation of all philosophy." This is evidently the interpretation of s'Gravesande, *Mathematical Elements of Natural Philosophy . . .*, pp. vii and 3. Also of Pemberton, *op. cit.*, pp. 24-25. Challis has called attention to the grounds on which Newton held this principle to be validly established.

rules was altogether to mistake one's aim.[73] The "regulae philosophandi" are in translation as follows:

RULE I

We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances.

To this purpose the philosophers say that Nature does nothing in vain, and more is in vain when less will serve; for Nature is pleased with simplicity, and affects not the pomp of superfluous causes.

RULE II

Therefore to the same natural effects we must, as far as possible, assign the same causes. . . .

RULE III

The qualities of bodies, which admit neither intensification nor remission of degrees, and which are found to belong to all bodies within the reach of our experiments, are to be esteemed the universal qualities of all bodies whatsoever.

For since the qualities of bodies are only known to us by experiments, we are to hold for universal all such as universally agree with experiments. . . . We are certainly not to relinquish the evidence of experiments for the sake of dreams and vain fictions of our own devising; nor are we to recede from the analogy of Nature, which is wont to be simple, and always consonant to itself. We no other way know the extension of bodies than by our senses, nor do these reach it in all bodies; but because we perceive extension in all that are sensible, therefore we ascribe it universally to all others also. . . . And this is the foundation of all philosophy. . . .

RULE IV

In experimental philosophy we are to look upon propositions inferred by general induction from phenomena as accurately or very nearly true, notwithstanding any contrary hypotheses that may be imagined, till such time as other phenomena occur, by which they may either be made more accurate, or liable to exceptions.

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[73] Thomas Reid, *An Inquiry into the Human Mind*, in *The Works of Thomas Reid . . .*, (ed. W. Hamilton), 2 vols., 8th ed. (Edinburgh, 1895), I, pp. 95-211, p. 97.

This rule we must follow, that the argument of induction may not be evaded by hypotheses.[74]

To imply that for Newton these rules of method were "apriorisms" or "speculative assumptions about the structure of the universe," that they were merely methodological principles of a "tentative and provisional nature," [75] is to make of him a philosopher born out of time. If "Newton's conscious reaction to metaphysics was one of vigorous opposition, as to a collection of quite unverifiable 'hypotheses'",[76] he does not seem to have said so. Newton was no more prepared to admit metaphysical than physical hypotheses. The metaphysical principles involved in his four "regulae philosophandi" were as evidently to be inferred from the necessarily valid testimony of common sense experience and the power of abstraction as was the Principle of the Uniformity of Nature. Newton's physics was not independent of all metaphysics.[77] In this respect Newton's affinity with the Middle Ages and Scholasticism may be said to impress us as much as his revolt against a too deductive methodology.[78]

As has been said, there are expressed in Newton's "regulae philosophandi" very definite and fundamental metaphysical principles of Aristotelian and Scholastic philosophy. Reality could be known substantially as it is, and as Newton put it in the first rule, true causes were to be discovered.[79] It is true

[74] I. Newton, *Mathematical Principles . . .*, pp. 398-400.

[75] E. A. Burtt, *op. cit.*, p. 215. Cf. L. S. Stebbing, *op. cit.*, p. 313.

[76] E. A. Burtt, "The Contemporary Significance of Newton's Metaphysics," *Isaac Newton 1642-1727*, pp. 137-140, p. 137.

[77] For the contradictory opinion on this point cf. Léon Bloch, *op. cit.*, p. 420. Cf. Milhaud's comment on the readiness with which current ideas are projected into the thought of Newton, G. Milhaud, *op. cit.*, pp. 497-498.

[78] Cf. Léon Bloch, *op. cit.*, p. 416.

[79] Whewell has an elaborate explanation of what is here meant by a true cause, but Newton was actually only stating the obvious—the necessity of seeking the truth, that is, an accurate representation of reality as it is. W. Whewell, *op. cit.*, pp. 186 ff.

that his method "presupposes" what has been called "a naïve belief in the reality of the objective world, whose attributes are not only independent of the observer, but are also concordant with his observation."[80] Fortunately Newton did possess such an "intuitive belief," attribute it to temperament if we will.[81]

In his fourth rule Newton said that inference by general induction from phenomena could be a valid source of truth.[82] The more general, perfect, or complete, the induction, the greater its validity as a source of truth.[83] While some propositions inferred by induction may be "accurately true," others may be only nearly so. It may therefore be said that Newton held some general conclusions not the result of a complete induction as "very nearly true," and as liable to even contradictory exceptions upon experimental evidence.[84] The impor-

[80] L. T. More, *op. cit.*, p. 322.

[81] *Ibid.*, p. 103. Newton explained in his third rule that a knowledge of some bodies was obtained through his senses, whose evidence was interpreted by his power of abstraction. The knowledge thus gained was held universally valid for all bodies. But it must be noted here that in his brief references to the knowledge process, Newton seems to have ascribed to the senses a more Lockian rôle than that assigned them in the Scholastic dictum: "nihil in intellectu, quod prius non fuerit in sensu." It is practically impossible to say just what was Newton's idea of the rôle of the senses in the knowledge process.

[82] Newton wrote in his General Scholium: "In this philosophy particular propositions are inferred from the phenomena, and afterwards rendered general by induction." I. Newton, *Mathematical Principles . . .*, p. 547.

[83] Newton wrote in his *Opticks:*

"And although the arguing from Experiments and Observations by Induction be no Demonstration of general Conclusions; yet it is the best way of arguing which the Nature of Things admits of, and may be looked upon as so much the stronger, by how much the Induction is more general." Query 31, p. 404.

[84] Newton wrote in the *Opticks:*

"Hardness may be reckon'd the Property of all uncompounded Matter. . . . For all Bodies, so far as Experience reaches, are either hard, or may be harden'd; and we have no other evidence of universal Impenetrability, besides a large Experience without an experimental Exception." Query 31, p. 389.

"And if no Exception occur from Phenomena, the Conclusion may be pronounced generally. But if at any time afterwards any Exception shall

tant methodological point to be noted for this sort of propositions is Newton's insistence on constant experimental verification.[85]

But it cannot be altogether certainly asserted that by his method Newton pretended never to afford more than high probability, or that, according to Newton, "we have no metaphysical guarantee whatever against there appearing exceptions to even our most confidently adopted principles. . . ."[86] Newton's fourth rule may also be interpreted to mean that some propositions inferred by general, though incomplete, induction from phenomena are "accurately true," and not liable to contradictory exceptions, but only to the possibility of being made "more accurate."[87] The Principle of the Uniformity of Nature may be taken as an instance. Only propositions "very nearly true" were liable to even contradictory exceptions.

Of all four "regulae philosophandi" Newton's third rule was the most important. As has been pointed out, from the limited experience of his senses with the properties of some bodies, Newton claimed to have validly inferred by his power of abstraction the uniformity of those properties in all bodies. Newton did not assume their uniformity; he knew it. He did not propose it as an hypothesis. He assumed only what every one must assume, if it be an assumption rather than an intuition,—that he could know reality substantially as it is. Newton proposed as validly established the Principle of the Uniformity of Nature. Nature was inferred to be an intelligible and

occur from Experiments, it may then begin to be pronounced with such Exceptions as occur." *Opticks*, Query 31, p. 404.

[85] Cf. W. Whewell, *op. cit.*, pp. 196, 197.

[86] E. A. Burtt, *The Metaphysics of Sir Isaac Newton*, p. 216.

[87] Our interpretation, based on the alternativeness of the parallels in the fourth rule is more evident in the original Latin text:

"*In Philosophia experimentali, Propositiones ex phaenomenis per inductionem collectae, non obstantibus contrariis hypothesibus, pro veris aut accurate, aut quamproxime, haberi debent, donec alia occurrerint Phaenomena, per quae aut accuratiores reddantur, aut exceptionibus obnoxiae.*" *Isaaci Newtoni Opera quae exstant omnia . . .* (ed. Samuel Horsley), 5 vols. (London, 1779-1785), III, p. 4.

intelligibly ordered system.[88] This was the "foundation of all philosophy."

Nevertheless as the foundation of the "regulae philosophandi" and of all "reasonings in Natural Philosophy," Newton's contemporary, s'Gravesande proposed this axiom: "*That the Creator of the Universe governs all Things, by Laws determin'd by his Wisdom, or spontaneously flowing from the Nature of the Things.*" [89] More modern authors look upon Newton's "foundation of all philosophy" as "an arbitrary maxim," [90] "unavoidably assumed as universally true," [91] as a "postulate of science," [92] or as the "final and unchangeable," "ultimate postulate of all thought," a "methodological principle . . . subject to the proviso that further experiences confirm the presumption." [93]

Yet Newton had believed it established beyond doubt that nature was an intelligible, uniform, ordered system.[94] For that

[88] Cf.: "whence arises all that Order and Beauty which are in the World?" *Opticks*, Query 28, p. 369.

[89] W.-J. s'Gravesande, *Mathematical Elements of Natural Philosophy . . .*, pp. 2-3. In his preface to the first edition of this work he attempted in another way to establish the Principle of the Uniformity of Nature. As analogy was the only method of reasoning left us in some cases by the Creator, it must be a valid method. Now as the foundation of analogical reasoning is the uniformity of nature, nature must therefore be uniform. *Ibid.*, pp. vii-viii.

[90] Cf. W. Whewell, *op. cit.*, p. 192.

[91] *Ibid.*, p. 194.

[92] Cf. Léon Bloch, *op. cit.*, p. 463.

[93] Cf. E. A. Burtt, "The Contemporary Significance of Newton's Metaphysics," *Isaac Newton, 1642-1727*, pp. 137-140, *passim*.

[94] Cf.: "all material things seem to have been . . . variously associated in the first Creation by the counsel of an intelligent Agent. For it became him who created them to set them in order. And if he did so, it's unphilosophical to seek for any other Origin of the World, or to pretend that it might arise out of a Chaos by the mere Laws of Nature, though being once form'd, it may continue by those Laws for many Ages." *Opticks*, Query 31, p. 402.

"Such a wonderful Uniformity in the Planetary System must be allowed the Effect of Choice. And so must the Uniformity in the Bodies of Animals. . . ." *Ibid.*, p. 402.

reason nature could be said to be " always consonant to itself." Newton's conviction of this uniformity and intelligible order in nature he expressed in the Aristotelian and Thomistic adage to be found in the first rule: *Natura nihil agit frustra.* Now, not only did order and intelligence mean that all things have a sufficient reason, both final and efficient, but they implied as well that each particular thing had a very definite, particular, and sufficient reason. Experience confirmed this implication. Though Newton did not state it explicitly he evidently drew the proper methodological inference: *entia non sunt multiplicanda praeter necessitatem.* Supposed causes therefore were not to be multiplied. And in accord with the analogy of nature " which is wont to be simple " similar effects were to be assigned to similar causes.

Newton's explanation of phenomena was based on his claim to be able to know true and sufficient causes. The relation of cause to effect was for him a valid and unquestioned truth. Its truth was as fundamental as, and more evidently capable of proof than, the uniformity of nature. Newton can not be said ever to have questioned the Principle of Causality, or to have thought its validity only provisory. Upon its validity and that of the Principle of the Uniformity of Nature, upon the validity of the necessary intuition, or assumption, that he could know reality substantially as it is, Newton may be said to have based the validity of his whole methodology and of all his scientific conclusions.

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BERGSON'S APPROACH TO GOD[1]

I

WRITING to P. de Tonquédec in 1912, Henri Bergson described in the following words the inspiration and the inner logic of his philosophy: "The argument of *Time and Free Will* brings into light the fact of free will; that of *Matter and Memory* makes, I hope, sensible the spirituality of the soul; that of *Creative Evolution* brings out the fact of creation. From all of them emerges the idea of God, creator and free, source both of matter and of life, whose creative effort goes on in the order of life through the evolution of species and the formation of human persons, and consequently the refutation of all monism and pantheism. However to go further and make these conclusions more precise, I should take up the study of quite different problems, the moral problems. I am not sure I shall ever publish anything on that subject; I will do it only if I get results that appear to me as demonstrable as those of my other works".[2]

For twenty years friends and opponents of Bergsonian philosophy looked for the fulfilment of that promise, some, like Jacques Chevalier,[3] anticipating a decisive profession of theism, others wondering whether the illustrious thinker would succeed in disengaging himself from the monism latent in his concept

[1] Henri Bergson, *The Two Sources of Morality and Religion.* Translated by R. Ashley Audra and Cloudesley Brereton with the assistance of W. Horsfall Carter (New York: Henry Holt and Company, 1935). Pp. viii + 308. The value of this translation appears from the fact that it was made with the author's collaboration. At his particular request, and under his guidance, certain more difficult passages "have been re-written and even re-thought in English" and, once recast in this way, submitted to his final approval.

[2] *Études*, 20 février 1912, p. 515. Our translation here as elsewhere, unless otherwise noted.

[3] Jacques Chevalier, *Henri Bergson*, chap. vii: "The Trend of Bergsonian Thought", (New York, 1928.)

of creation. *The Two Sources* gives us Bergson's moral and religious philosophy and enables us to decide which of the two anticipations was correct.

In four chapters the work treats successively of: 1) Moral Obligation; 2) Static Religion; 3) Dynamic Religion; 4) Mechanics and Mysticism. Only the first and second chapters, in which the author gives his views regarding the origin and nature of religion and the existence and nature of God, are of direct interest to us in this study, but they are logically connected with his moral philosophy, which calls, therefore, for a brief consideration.

There are two sources of morality. The first, purely social and biological, is found in the *pressure* exercised upon the individual by the collective will. Its function is to insure for the social body and its members the organization which will enable it to live and to endure. Its character is infra-intellectual and is the counterpart in man to the instinct of animals, to the bond which unites the bees in the hive or the ants in the ant-hill, or again to the habits which insure the normal functioning of the cells of an organism.

> Conceive obligation as weighing on the will like a habit, each obligation dragging behind it the accumulated mass of the others, and utilising thus for the pressure it is exerting the weight of the whole: here you have the totality of obligation for a simple, elementary, moral conscience. That is the essential: that is what obligation could, if necessary, be reduced to, even in those cases where it attains its highest complexity. (pp. 16-17)

Such a moral or, rather, social obligation exerted by society on its members, though conformable to their vital needs, will found only a *closed* morality. It will apply only to a closed society and will evolve with that society. Applying to limited groups, it cannot extend to the whole human race.

The other source, from which the true morality will emerge, is the *appeal* of the hero, of the superior man who has been

stirred by a creative emotion to love and seek an ideal, who radiates his enthusiasm and draws other men to imitate him.

> Why is it that saints have their imitators, and why do the great moral leaders draw the masses after them? They ask nothing, and yet they receive. They have no need to exhort; their mere existence suffices. For such is precisely the nature of this other morality. Whereas natural obligation is a pressure or a propulsive force, complete and perfect morality has the effect of an appeal. (p. 26)

"How comes it", Bergson asks, "that the men who have set the example have found other men to follow them? And what is the power that is in this case the counterpart of social pressure?", in other words, what is the source of dynamic morality? This source is to be found in an emotion, in a creative emotion. For "into the most peaceful emotion there may enter a certain demand for action, which differs from obligation as described above (in static morality) in that it will meet with no resistance, in that it imposes only what has already been acquiesced to, but which none the less resembles obligation in that it does impose something". (p. 31) In contrast with the emotion which Bergson calls infra-intellectual, which is "the stirring of sensibility by a representation" or an idea, this emotion is, in relation to the intellectual states which are to supervene, "a cause not an effect", it is "productive of ideas", and it might be called "supra-intellectual". "Which amounts to saying that, in attributing to emotion a large share in the genesis of the moral disposition, we are by no means enunciating 'a moral philosophy of sentiment'. For we are dealing with an emotion capable of crystallizing into representations and even into an ethical doctrine". (p. 39)

Considering the relation between the "closed" and the "open" morality Bergson views the latter as a development of the former:

> The act by which the soul opens out broadens and raises to pure spirituality a morality enclosed and materialized in ready-made rules:

the latter becomes in comparison with the former, something like a snapshot view of movement. Such is the inner meaning of the antitheses that occur one after the other in the Sermon on the Mount: 'Ye have heard that it was said . . . I say unto you . . .' On the one hand the closed, on the other the open. Current morality is not abolished; but it appears like a virtual stop in the course of actual progression. The old method is not given up; but it is fitted into a more general method, as is the case when the dynamic reabsorbs the static, the latter becoming a mere particular instance of the former. (p. 51)

And he finds in this the explanation of the mixed character of moral obligation:

You cannot reject these two data: a compulsion, or something like it, exerted by habits, which correspond, in man, to what you call instinct in animals, and, besides this, a certain stirring of the soul, which you call emotion; in the one case you have primal obligation, in the other, something which becomes an extension of it; but in both cases you are confronted by forces which are not strictly and exclusively moral, and whose origin, therefore, it is no special duty of the moralist to trace. Because they nevertheless insisted on doing so, philosophers have misunderstood the compound nature of obligation in its present-day form: they have been led to attribute to this or that mental picture or operation the power of influencing the will: as if an idea could ever categorically demand its own realization! as if the idea were anything else in this case, than an intellectual extract common to all, or, better still, the projection on to the intellectual plane of a whole set of tendencies and aspirations, some above, some beneath, pure intelligence! Reinstate the duality of origin, and the difficulty vanishes. Nay, the duality itself merges into a unity, for 'social pressure' and 'impetus of love' are but two complementary manifestations of life, normally intent on preserving generally the social form which was characteristic of the human species from the beginning, but, exceptionally, capable of transfiguring it, thanks to individuals who each represent, as the appearance of a new species would have represented, an effort of creative evolution. (p. 87)

There are two forms and two sources of religion as there are two forms and two sources of morality. Primitive man is no more religious than he is moral, but his religious evolution, like his moral evolution, passes on from the static to the dynamic.

However "there has never been a society without religion". (p. 94) What was the origin of religion which first appeared in the form of "the most crass superstition"? Bergson rejects the theories of both Levy-Bruhl, who seeks the origin of religion in "primitive mentality", and Durkheim, who stresses the factor of "collective mentality". For him the source of static religion is the "myth-making faculty".

> Some need, individual perhaps, social in any case, must have required from the mind this type of mental activity. Let us ask what that need was. It must be noted that fiction, when it has the power to move us, resembles an incipient hallucination: it can thwart our judgment and reason, which are the strictly intellectual faculties. Now what would nature have done, after creating intelligent beings, if she had wanted to guard against certain dangers of intellectual activity without compromising the future of intelligence? Observation supplies us with the answer. To-day, in the full efflorescence of scientific development, we see the finest arguments in the world come to grief in the face of a single experiment: nothing can resist facts. So that if intelligence was to be kept at the outset from sliding down a slope which was dangerous to the individual and society, it could be only by the statements of apparent facts, by the ghosts of facts; failing real experience, a counterfeit of experience had to be conjured up. . . . And that being so, we should not be surprised to find that intelligence was pervaded, as soon as formed, by superstition, that an essentially intelligent being is naturally superstitious, and that intelligent creatures are the only superstitious beings. (p. 99)

The three dangers of intellectual activity for the individual and for society which the myth-making function is destined by nature to obviate are: selfishness, the fear of death and the fear of the unforeseen.

Society is capable of progress, but it must first of all maintain itself. Now an appeal to individual initiative involves the risk of endangering social discipline, because "endowed with intelligence, roused to thought, man will turn to himself and think only of leading a pleasant life. . . . The truth is that intelligence would counsel egoism first". "But nature is on

the watch . . . some protective deity of the city will be there to forbid, threaten, punish." "Hence

> we must not be surprised if in uncivilized communities we meet with prohibitions which are semi-physical, semi-moral restraints on certain individual acts; the object occupying the center of a field of resistance will be called both 'sacred' and 'dangerous,' once these two definite ideas are constituted, and once the distinction is clearly made between a physical force of repulsion and a moral inhibition; up till then, it possesses the two properties fused into one; it is *taboo,* to use the Polynesian term made familiar to us by the science of religions. (p. 116)

Looked at from this first point of view, religion is then "a defensive reaction of nature against the dissolvent power of intelligence". (p. 112)

Moreover, man knows that he will die, and to the idea of inevitable death nature opposes the image of a continuation of life after death. "From this second standpoint, religion is a defensive reaction of nature against the representation, by intelligence, of the inevitability of death". (p. 121) Belief in immortality benefits society as well as individuals:

> A society already civilized is supported by laws, by institutions, even by buildings constructed to defy the ravages of time; but primitive societies are simply 'built up of human beings': What would become of their authority if people did not believe in the enduring character of the individualities of which they are composed? It is therefore essential that the dead should remain present. Ancestor-worship will come later. The dead will then be closer to gods. (p. 121)

In the last place, human activity operates among events on which it has a certain influence, but on which it is also dependent, and these events are to some extent foreseeable, and, to a greater extent, unforeseeable.

> The uncivilized man, who has at his disposal nothing but an inelastic science exactly proportionate to the effect he exerts on matter, cannot project into the realm of the unforeseeable a broader science which might embrace it completely and which at once opens up wide vistas to his ambition. Rather than lose heart, he extends to this realm the

system of explanation he uses in his intercourse with other men; he will expect to meet there with friendly forces, he will also think himself exposed to malignant influences; in any case he will not be dealing with a world completely alien to him. (p. 132)

All the religious representations which here arise directly from it (the vital impetus) might be defined in the same way: they are defensive reactions of nature against the representation by the intelligence, of a depressing margin of the unexpected between the initiative taken and the effect desired. (p. 130)

Summing up this part of his study of the origin of primitive religion, Bergson writes: "Religion is less a fear than a reaction against fear, and it is not, in its beginnings, a belief in deities". (p. 142) Neither is this origin to be traced to any metaphysical interpretation of nature:

Before man can philosophize, man must live; it is from a vital necessity that the primeval tendencies and convictions must have originated. To connect religion with a system of ideas, with a logic or a 'pre-logic,' is to turn our remote ancestors into intellectuals. . . . The truth is that religion, being coextensive with our species, must pertain to our structure. We have just connected it with a fundamental experience; but that experience was such that we had foreseen it before encountering it; in any case it is quite easily explained when it has been encountered; all we have to do is to consider man again in his place among living things, and psychology as a part of biology. (p. 166)

From man's image of "things and events turning towards him", from his view of an environment animated by a certain "intention" towards him, good or evil, and from his "vital impulsion" to adjust himself to that environment, relying upon it, if it be good, and trying to avert its effects, if it be evil, religion has sprung. It has split and evolved "into two divergent directions, on the one hand towards belief in spirits already individualized, and on the other towards the idea of an impersonal essence", (p. 167) utilizing in every possible way the intention which it feels to be present, either by taking the physical effectiveness which the intention possesses, exaggerating

its materiality and then trying to master it by force, or by approaching it from the moral side, by impelling it, on the contrary, in the direction of a personality to be won by prayer. Hence two religious developments, Magic, which marks an impoverishment or a materialization of the original belief, and belief in spirits, in "gods of increasingly marked personality, who are more and more definitely interrelated or who tend to become merged into a single deity". (p. 168)

Bergson devotes many interesting pages to the description of the main manifestations of static religion, animal worship, totemism, mythology, rites and prayer, (pp. 170-192) and sums up his analysis of static religion in the following words:

> It was nature who ordained intelligence, who placed it at the end of one of the two great lines of evolution as a counterpart to the highest form of instinct, which is the terminal point of the other. It is impossible that she should not have taken the precaution to see that a condition of order, which had been even slightly disturbed by intelligence, should tend to re-establish itself automatically. As a matter of fact, the myth-making function, which belongs to intelligence, and which yet is not pure intelligence, has precisely that object. Its rôle is to elaborate that religion we have been dealing with up to now, that which we call static, and of which we should say that it was natural religion, if the term were not used in another sense. We have then only to sum up what we have said to define this religion in clear terms. *It is a defensive reaction of nature against what might be depressing for the individual, and dissolvent for society, in the exercise of intelligence.* (p. 194)

Dynamic religion is to static religion what open morality is to closed morality. Static religion was infra-intellectual and natural, dynamic religion will be supra-intellectual, rare and exceptional, being characterized by the intervention of a religious hero, a saint or a mystic, separated from the former not by differences of degree but by a "radical difference of nature". (p. 202) How does it arise and grow? Man, "the purpose of the entire process of evolution", in whom life is "the suc-

cessful effort (of creative energy)", however precarious and incomplete this success may be, should be able to recover the confidence he lacks or which perhaps has been undermined by reflexion " by turning back for fresh impetus, in the direction whence that impetus came ". But it will not be through intelligence alone but by intensifying and above all by consummating in action that " fringe of intuition " which lingers around intelligence.

A soul strong enough, noble enough to make this effort would not stop to ask whether the principle with which it is now in touch is the transcendent cause of all things or merely its delegate. It would be content to feel itself pervaded, though retaining its own personality, by a being immeasurably mightier than itself, just as an iron is pervaded by the fire which makes it glow. Its attachment to life would henceforth be its inseparability from this principle, joy in joy, love of all that which is all love. In addition it would give itself to society, but to a society comprising all humanity, loved in the love of the principle underlying it. The confidence which static religion brought to man would thus be transfigured: no more thought for the morrow, no more anxious heart-searching; materially the object would no longer be worthwhile, and morally would take on too high a significance. Now detachment from each particular thing would become attachment to life in general. (p. 201)

The *mystic* will be the hero of this ascension, whose whole life will become a pattern radiating around him the new life which he has discovered and drawing other men in the way of detachment and love, initiating them to dynamic religion. Bergson offers this definition of mysticism:

In our eyes, the ultimate end of mysticism is the establishment of a contact, consequently of a partial coincidence, with the creative effort which life itself manifests. This effort is of God, if it is not God Himself. The great mystic is to be conceived as an individual being, capable of transcending the limitations imposed upon the species by its material nature, thus continuing and extending the divine action. (p. 209)

He then proceeds to a search of all historical manifestations of mysticism from Orphism and the Dionysiac mysteries,

Pythagoreanism and Plotinism in the Greek world to the older and more recent Hindu religions. He reaches this conclusion:

> The complete mysticism is that of the great Christian mystics. Let us leave aside, for the moment, their Christianity, and study in them the form apart from the matter. There is no doubt that most of them passed through states resembling the various culminating phases of the mysticism of the ancients. But they merely passed through them: bracing themselves up for an entirely new effort, they burst a dam; they were then swept back into a vast current of life; from their increased vitality there radiated an extraordinary energy, daring, power of conception and realization. . . . When we grasp that such is the culminating point of the inner evolution of the great mystics, we can but wonder how they could ever have been classed with the mentally diseased. (pp. 205-217)

Then describing at length this true mysticism, Bergson distinguishes the mystic states from the morbid elements which may accompany them and, describing the means by which the mystics lift up humanity to a higher level, he shows how dynamic religion becomes a factor of transformation for the whole human race. Leaving raptures and ecstasies behind them to reach "the goal, which is identification of the human will with the divine will, they raise themselves to "the rank of *adjutores Dei*, 'patients' in respect to God, agents in respect to man", "for the love which consumes them is no longer simply the love of man for God, it is the love of God for all men. Through God, in the strength of God, they love all mankind with a divine love", (pp. 218, 221, 222) and this love is no mere philanthropy,

> It is not the extension of an instinct, it does not originate in an idea. It is neither of the senses nor of the mind. It is of both, implicitly, and is effectively much more. For such a love lies at the very root of feeling and reason, as of all other things. Coinciding with God's love for His handiwork, a love which has been the source of everything, it would yield up, to any one who knew how to question it, the secret of creation. It is more metaphysical than moral in its essence. What it wants to do,

with God's help, is to complete the creation of the human species and make of humanity what it would have straightway become had it been able to assume its final shape without the assistance of man himself. (p. 223)

And Bergson concludes with a tribute to Christianity and to Christ himself which has seldom been equalled beyond professed Christians:

In reality, the task of the great mystics is to effect a radical transformation of humanity by setting an example. The object could be attained only if there existed in the end what should theoretically have existed in the beginning, a divine humanity. So, then, mysticism and religion are mutually cause and effect, and continue to interact on one another indefinitely. Yet there must have been a beginning. And indeed at the origin of Christianity there is Christ. . . . If the great mystics are indeed such as we have described them, they are the imitators, and original but incomplete continuators, of what the Christ of the Gospels was completely. (p. 228)

The analysis of mystical experience leads Bergson to the problem of God to which he devotes the last pages of his chapter on Dynamic Religion. (pp. 229-254) We shall state here briefly how the philosopher approaches " as it were experimentally the problem of the existence and of the nature of God ". He holds the rational method of Aristotle and the Scholastics to imply " a fundamental illusion ".

Generally speaking, we look upon an object as existing if it is perceived, or might be perceived. Such an object is therefore presented in actual or possible experience. No doubt you may construct the idea of an object or of a being, as the geometrician does for a geometrical figure; but experience alone will decide whether it actually exists outside the idea thus constructed. Now, you may assert that this is just the question, and that the problem precisely is to know whether a certain Being is not distinctive from all other beings in that He stands beyond the reach of our experience, and yet is as real as they are. Granted, for this once; although an assertion of this kind, with its attendant arguments, appears to me to imply a fundamental illusion. But then you must prove that the Being thus defined, thus demonstrated, is indeed God. (pp. 229-230)

and he says bluntly: "The God of Aristotle has nothing in common with the gods worshipped by the Greeks; nor has he much more in common with the God of the Bible, of the Gospels". (p. 232) But where reason fails, mystical experience, in spite of its individual and exceptional character, gives us a positive evidence, the strength of which lies in the agreement of the mystics among themselves:

> We must first note that mystics generally agree among themselves. This is striking in the case of the Christian mystics. To reach the ultimate identification with God, they go through a series of states. These may vary from mystic to mystic, but there is a strong resemblance between them. In any case, the path followed is the same, even admitting that the stopping places by the way are at different intervals. They have in any case the same terminal point. In the descriptions of the final state we find the same expressions, the same images, the same comparisons although the authors were generally unknown to each other . . . their deep-seated agreement is a sign of an identity of intuition which would find its simplest explanation in the actual existence of the Being with whom they believe themselves to hold intercourse. (pp. 235-236)

This however does not give absolute certitude, but at best a sum-total of probabilities which is practically equivalent to certainty.

> We may admit that mystical experience, left to itself, cannot provide the philosopher with complete certainty. It could be absolutely convincing only if he had come by another way, such as sensuous experience coupled with rational inference, to the conclusion of the probable existence of a privileged experience through which man could get into touch with a transcendent principle. (p. 236)
>
> Yet probabilities may accumulate, and the sum-total be practically equivalent to certainty. We have alluded elsewhere to those "lines of fact" each one indicating but the direction of truth, because it does not go far enough: truth itself, however, will be reached if two of them can be prolonged to the point where they intersect. . . . In our opinion this method of intersection is the only one that can bring about a decisive advance in metaphysics. . . . Now it so happens that a thorough study of a certain number of problems, entirely different from religious prob-

lems, has led us to a conclusion which makes probable the existence of a singular privileged experience, such as a mystic experience. And, on the other hand, the mystical experience, studied for its own sake, supplies us with pointers that can be added and fitted to the knowledge obtained in an entirely different field, by an entirely different method. It is a case, then, of one supporting and complementing the other. (p. 237)

These lines throw a light on Bergson's philosophical method. Starting from experience and determined not to utilize any but experimental data, he is confident that he can attain the divine reality, which is not an object of experience, very much as a surveyor who " measures the distance to an unattainable point by taking a line on it, now from one, now from the other of two points which he *can* reach ". (p. 237) He recalls how " it was by following as closely as possible the evidence of biology that he reached the conception of a vital impetus and of a creative evolution ". This conception was " by no means a hypothesis ", it was " a condensation of fact, a summing up of summings up ". The facts did not show directly the nature of this impetus, nor whether " it sufficed unto itself ", but " we saw clearly from what direction the answer might come. For the energy thrown through matter appeared to us, as it were, below or above consciousness, in any case of the same order as consciousness ". (p. 238) Dividing itself between diverging lines of evolution, it had resolved itself into two modes of knowledge: the instinct of insects and the intelligence of man.

But just as there subsisted around animal instinct a fringe of intelligence, so human intelligence preserved a halo of intuition. The latter, in man, had remained fully disinterested and conscious, but it was only a faint glow and did not radiate very far. Yet it is from this that the light must come, if ever the inner working of the vital impetus were to be made clear in its significance and in its object. For this intuition was turned inwards, and if, in a first intensification, beyond which most of us did not go, it made us realize the continuity of our inner life, a deeper intensification might carry it to the roots of our being, and thus

to the very principle of life in general. Now is not this precisely the privilege of the mystic soul? (p. 238)

Having ascertained that the existence of a mystic experience, which he has already shown is not purely fanciful, and assuming that it possesses "an original content, drawn straight from the very well-spring of religion, independent of all that religion owes to tradition, to theology, to the Churches", Bergson asks himself "in what measure mystic experience is a continuation of the experience which led us to the doctrine of the vital impetus", and claims that "all the information with which it would furnish philosophy, philosophy would repay in the shape of confirmation". (p. 239) In this way we are introduced to an analysis of the content of the concept of God as he reveals himself in mystical experience. And first of all the mystics ignore the "false problems" which are the main origin of metaphysical anguish: why anything exists, why matter, or spirit, or God, rather than nothing; and for similar reasons, they do not worry about the difficulties accumulated by philosophy around the metaphysical attributes of Deity. Did he wish to find a formula for mysticism, the philosopher could thus define the nature of God:

God is love, and the object of love: herein lies the whole contribution of mysticism. About this twofold love the mystic will never have done talking. His description is interminable, because what he wants to describe is ineffable. But what he does state clearly is that divine love is not a thing of God: it is God himself. It is upon this point that the philosopher must fasten who holds God to be a person, and yet wishes to avoid anything like a gross assimilation with man. (p. 240)

This love has an object, and that object is man:

The mystics unanimously bear witness that God needs us, just as we need God. Why should he need us unless it be to love us? And it is to this very conclusion that the philosopher who holds to the mystical experience must come. Creation will appear to him as God undertaking to create creators, that He may have, besides Himself, beings worthy of His love. (p. 243)

Hence:

there is nothing to prevent the philosopher from following to its logical conclusion the idea which mysticism suggests to him of a universe which is the mere visible and tangible aspect of love and of the need of loving, together with all the consequences entailed by this creative emotion: I mean the appearance of living creatures in which this emotion finds its complement; of an infinity of other beings without which they could not have appeared, and lastly the unfathomable depths of material substance without which life would not have been possible. (p. 244)

Finally, comparing the results of his analysis of the content of mystical experience with the conclusions of his former work, *Creative Evolution*, Bergson shows that they complete naturally, though not necessarily, those of his former work. The mystics represent the ultimate manifestation of creative energy, they have succeeded

by an individual effort added to the general work of life, in breaking through the resistance put up by the instrument, in triumphing over materiality—in a word in getting back to God. . . . They have blazed a trail along which other men may pass. They have, by this very act, shown to the philosopher the whence and the whither of life. (p. 246)

II

It is difficult to do full justice to the salutary reaction against materialism, determinism and pantheism that seems to be the characteristic feature of Bergson's philosophy. The *Two Sources*, in which the author's intention to affirm the existence of a personal God is so clearly expresed, in which the testimony of the mystics is invoked to give an experimental value to our knowledge of the First Principle and to give reality and warmth to the rather cold and abstract concept of the Deity which results from pure philosophical analysis and reasoning, with its generous tribute to Christianity and to the Christian saints and heroes, who were true "moral creators", who have made their mark in history and bid us enter into the divine city which they

have made possible, is a worthy crowning of the life-work of a great thinker and has received a generous appreciation from Catholic critics.[4] But the most sympathetic of them temper their praises with important qualifications in which we feel bound to join.

In his letter to P. de Tonquédec quoted above, Bergson had said that a study of the moral problem was a necessary prerequisite to a complete refutation of pantheism. We might therefore expect that in analysing the sources of morality, the eminent author would have traced to God the origin of moral obligation, but neither when he deals with the "closed" morality, nor when he describes "open" morality does he lead us to God. The closed morality is nothing but the pressure exercised by society; it creates a necessity, not an obligation. Dealing with this aspect of Bergson's doctrine, Fr. Sertillanges writes:

> A pressure that is suffered is not an obligation. We are told that in every case it is subject to an acceptation by reason; but taken as a whole, it is the social nature immanent in the individual and cannot be resisted. One cannot help being what he is. Hence, under every specific duty that is proposed to the will the 'totality of obligation' transpires which binds the will as does habit or instinct, and our hesitations, our anxieties of conscience when we are tempted to resist it, merely reveal

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[4] See A. D. Sertillanges, "Morale et Religion d'après M. Bergson", *Vie Intellectuelle*, mai 1932; "Questions à M. Bergson", *ibid.*, juin 1932; "La clef des 'deux Sources'", *ibid.*, 5, 20 décembre 1932.

J. de Tonquédec, "Le Contenu des 'Deux Sources'", *Études*, 20 mars, 5 avril 1932.

R. Jolivet, "Le nouveau livre de M. Bergson. Les deux sources de la morale et de la religion", *Revue Apologétique*, juin 1932.

B. Romeyer, "Morale et religion chez H. Bergson", *Archives de Philosophie*, IX, 3.

E. Borne, "Spiritualité bergsonienne et spiritualité chrétienne", *Études Carmélitaines*, oct. 1932.

P. Descoqs, *Praelectiones Theolgiae naturalis* (Paris: 1935), Tom. II, Sect. V, Cp. IV, *Argumentum ex experientia mystica H. Bergson*, pp. 375-431.

Revue Thomiste, mai-juin 1933, the whole number is devoted to Bergson.

Ch. Lemaître, *Revue néo-scolastique*, three articles, 1933-1934.

its weight. It is quite certain that every moral obligation is based upon a natural inclination, an inner dynamism which is directed towards human ends, and is to be used in moral action. But we are surprised to see the name of moral obligation given to the necessity or quasi-necessity of that inclination, as though freedom were not distinct from necessity and the moral act of the will were not opposed to its automatic exercise.[5]

As to the other form of morality, that morality which has the "effect of an appeal", and which we might call inspirational, it may stir noble souls to rise above the lower instincts, it does not seem to create a real obligation. To quote again Fr. Sertillanges:

The mystic who does everything out of love without adverting to his 'duty', rises to a moral level before which the highest precepts pale away. Duty becomes the servant of love. Still is it necessary that the love which prompts us should appear as an obligation accepted by our reason as well as an attraction for our faculty of love. Else we remain within the confines of instinct, an instinct which may rise above moral obligation, but which is distinct from it.[6]

And the eminent Dominican points to the anti-intellectualistic prejudice of Bergson, who recognizes only one form of intelligence, the conceptual and static intelligence. Bergson may protest against the reproach that he is enunciating a "moral philosophy of sentiment", he may display a marvelous ingenuity in describing and illustrating the creative power of emotion which "can alone be productive of ideas", and offer to us a "supra-intellectual" morality. The fact remains that he eliminates every intellectual element from his idea of dynamic morality, and the very illustration which he takes from music shows how he conceives an emotion without any definite object:

It is through excess of intellectualism that feeling is made to hinge on an object and that all emotion is held to be the reaction of our sensory faculties to an intellectual representation. Taking again the

[5] Cf. *La Vie Intellectuelle*, June, 1932, pp. 357-358.
[6] *L. c.*

example of music, we all know that it arouses in us well-defined emotions, joy, sorrow, pity, love, that these emotions may be intense and that to us they are complete, though not attached to anything in particular. (p. 32)

The correctness of this analysis can be questioned. At any rate moral emotions are centered around an object, as the history of the moral heroes, the saints, clearly shows. We may add also that the saints never dissociated in their minds, nor in their lives, as Bergson does in claiming that dynamic morality is irreducible to static morality, the two forms of morality. Their mystical experiences did not give them the illusion that they might dispense with conforming to ordinary duties; rather they made them more scrupulous in the performance of those duties. The concept of obligation is an essential element of morality: the motive of love may be a strong incentive to the fulfilment of duty, but it must spring from the recognition by the moral agent, whether he be a saint or a primitive, of the authority of God who wants to be loved, but who wants also to be obeyed.

We have seen how Bergson opposes the two forms of Religion, the "static" which is an answer to social needs and the "dynamic" which is the creation of the mystics. Between them there is more than a difference of degree, there is "a radical difference of nature", though mysticism "ensures for the soul, to a pre-eminent degree, the security and the serenity which it is the function of static religion to provide". What is their respective value?

The reader will remember how Bergson traces the origin of "static" to the myth-making faculty. He may be critical of Durkheim's sociological theory, but he starts from the same assumption, namely, the denial of any belief in a deity at the beginnings of religion; for him religion arises and develops solely under the influence of biological needs. The latest historical studies on the origin of religion, such as Fr. Schmidt's "Origin and Growth of Religion", have revealed the unhis-

torical character of this conception, which might already be called antiquated. The best authorities in this field of study point out the fundamental fallacy of the evolutionary theory and the necessity of recognizing that religious ideas spring from the human mind as naturally and essentially as certain psychological reactions.[7]

We are familiar with the anti-intellectualism which is the source of Bergson's error on this point. He writes:

> Even before we consult experience, it would seem highly unlikely that humanity should have begun by theoretical views of any sort or kind. We shall say it over and over again: before man can philosophize, man must live; it is from a vital necessity that the primeval tendencies and convictions must have originated (pp. 165-166).

But even if it were true that among certain primitive peoples practices which are commonly taken to be religious, like Totemism and Magic, do not imply the apprehension of a supernatural power, it does not follow that such psychological element is wanting in other forms of religious faith, such as Animism, Mânism and Polytheism. To limit knowledge to experience or to reasoning within the sole range of experimental facts and to deny all philosophical interpretation based on principles which make the world intelligible is an evident exaggeration, and we may subscribe to the following words of W. E. Hocking, " Wherever there is feeling, there is an idea. The most crude and wild cry drawn from a human heart by religious awe is metaphysically as interesting as the intuition of the mystic. For it contains an intuition which bears on realities. . . . Religion is the dialectic certitude that the most fundamental realities are found in the invisible world ".[8]

These words bring out the universality of the religious faculty, which may be more or less highly developed, which may

[7] Cf. P. Radin, *Monotheism among Primitive Peoples* (London, 1924).

[8] W. E. Hocking, " Principes de méthode en philosophie religieuse ", *Revue de Métaphysique et de Morale*, vol. XXIX, 1922, p. 452.

find crude expressions as well as pure manifestations, but which in any case is natural to man and is susceptible of education. For Bergson, on the contrary, dynamic religion, the only one that brings the human soul into communion with the Creator, is "by reason of its very essence . . . exceptional". In fact the true mystic is "more than a man". (p. 202) We see then how a critic is justified in stressing the analogy between Bergson's ideal and that of Asiatic religions in which the common people had to be contented with mythical concepts, the esoteric meaning of which was revealed to a privileged caste in the course of secret initiations. Like open morality, dynamic religion, as presented by the eminent author of the *Two Sources*, noble as it is, seems to open the door to all the extravagant claims and abuses of Gnosticism. History tells us how the "spiritual" and "pneumatic" Marcionites and Cathari despised the static religion and the static morality of the common people and took the "Inner Master" as their only guide and how they were thus led to excesses of immorality. It shows us by contrast the true Christian mystics recognizing the dignity of the most humble and ignorant souls and finding in the ordinary rites and observances the best aliment for their piety.

In vain does Bergson appeal to common experience as a means of controlling and justifying the religious experiences of the mystics. He anticipates the objection: "It is alleged that the experiences of the great mystics are individual and exceptional, that they cannot be verified by the ordinary man". (p. 233) He grants that "some people are doubtless utterly impervious to mystic experience, incapable of feeling or imagining anything of it"; and more clearly yet that "mysticism means nothing, absolutely nothing, to the man who has no experience of it, however slight". (p. 226) Still, he invokes the authority of William James who used to say that when he heard those experiences spoken of by a man who had had them, "something

within him echoed the call". But does that mean that he could have at will repeated those experiences? It was not by a personal effort that the mystics entered into communion with God. They knew and they confessed that the sentiment of presence, of direct contact with God that had enraptured them was a pure gift of God. "Deum nemo vidit unquam", says the Apostle. When it has not pleased God to reveal himself to man, the only way open to man to arrive at the knowledge of God is by the use of his rational faculty.

When Bergson comes to analyse the content of mystical experience, he claims that it is enough "to take mysticism unalloyed, apart from the visions, the allegories, the theological language which express it". (p. 239) In other words he wants to empty it of its doctrinal content, of the intellectual element, which is the essential basis of Christian faith. "Whether we champion or impeach a religion, do we always take into account what is specifically religious in religion? We cherish or we dismiss a story which may have been found necessary for inducing a certain state of soul which can be propagated; but religion is essentially that very state. We discuss its definitions and its theories; and it has, indeed, made use of a metaphysic to give itself bodily substance; but it might, at a stretch, have assumed a different corporeal form, or even none at all". (pp. 257-258) No words could express more clearly Bergson's attitude to dogma, which, at best, would have only a symbolic value. He concedes that "at the origin of Christianity there is Christ", but he hastens to add: "From our standpoint, which shows us the divinity of all men, it matters little whether or no Christ be called a man. It does not even matter that he be called Christ". (p. 228) Bergson might protest that his religion, no more than his morality, is a religion of pure sentiment; he might insist that the mystical emotion is "creative of ideas", but dogmas are but "the crystallization, brought about by a scientific process of cooling, of what mysticism had poured,

while hot, into the soul of man"; that the partial adoption of the Aristotelian Neo-Platonism merely enabled Christianity "to become popular", but none of all that was essential. "For a mystic these questions simply do not exist, they are optical illusions arising, in the inner world, from the structure of human intelligence, they recede and disappear as the mystic rises superior to the human point of view". (p. 240) It is apparent that Bergson has renounced none of his anti-intellectualism and that it is at the expense of Christian theology that he has exalted Christian mysticism and Christian religion. When we examine the position he has taken regarding the problem of God, his existence and attributes, we shall find him laboring under the same anti-intellectualistic prejudice.

We have seen above how Bergson, rejecting as illusory any attempt at a rational demonstration of the existence of God, relies exclusively upon experience, the mystical experience, to ascertain that existence. "Indeed", he says, "we fail to see how philosophy could approach the problem in any other way". (p. 229) There is a striking resemblance between this position and that of the Modernists which is described and condemned in the Encyclical: *Pascendi.*[9] "This is their manner of putting the question: in the religious sentiment one must recognize a kind of intuition of the heart which puts man in immediate contact with the very reality of God, and infuses such a persuasion of God's existence and His action both within and without man as to excel greatly any scientific conviction. They assert, therefore, the existence of a real experience, and one of a kind that surpasses all rational experience". And the judgment follows at once:

> How far off we are here from Catholic teaching we have already seen in the decree of the Vatican Council. We shall see later how, with such

[9] We quote from the translation published in the *American Catholic Quarterly*, Vol. XXXII, Oct. 1907, "The Doctrines of the Modernists", pp. 683-730.

theories, added to the other errors already mentioned, the way is opened wide for atheism. Here it is well to note at once that, given this doctrine of experience, united with the other doctrine of symbolism, every religion, even that of paganism, must be held to be true. What is to prevent such experience from being met with in every religion? . . . Indeed, modernists do not deny, but actually admit, some confusedly, others in the most open manner, that all religions are true. That they cannot feel otherwise is clear. For on what ground, according to their theories, could falsity be predicated of any religion whatsoever?

These words give us the key to the refutation of Bergson's teaching that experience alone can supply a ground for belief in the existence of God. Not to stress the fact admitted by Bergson, that the mystical experience is the privilege of but a few, and therefore that the mass of humanity is doomed to remain ignorant of God, since that experience is incommunicable, the mystics themselves have no criterion by which they might recognize a false from a genuine intuition and the way is open to them to illusions from which there is no escape. No doubt Bergson invokes the convergence of the mystical experiences, all bearing witness to the necessity of acknowledging the existence of a transcendent reality. P. Descoqs comments as follows on this argument:

We grant most willingly that such a convergence, even in narrow limits, might be an interesting fact calling for a close examination, as does a supernatural miracle; moreover, if it could be ascertained that the mass of men have such an inchoative, confused and implicit experience of God, the testimony of the great mystics would be a very happy corroboration of that intuition and constitute a strong presumption in favor of the existence of God. But, in the first case, mystical intuition, unlike miracles which can be interpreted in the light of purely rational principles, requires other criteria to discern a true from a false experience, and these criteria presuppose that the true God is already known. A personal experience may, like a miracle, raise the question of a transcendent reality, but, as such, it cannot give to that question an answer commanding universal assent . . . if God is not already known in some other way and with certainty, it can reveal nothing about Him. In the other case, from the very way the problem is presented, it is clear that

the divine character of that confused experience has already been established, and therefore that God is already known; then the experience of the mystics will come as a confirmation of the existence of God and of the reality of the supernatural; in either case nothing can be proved *by that experience alone.*[10]

Bergson confesses that "left to itself, mystical experience cannot provide the philosopher with complete certainty", that "it could be absolutely convincing only if he (the philosopher) had come by another way, such as sensuous experience coupled with rational inference, to the conclusion of the probable existence of a privileged experience through which man could get into touch with a transcendent principle". (p. 236) Those who recognize the value of reason, who credit the mind with the power of demonstrating the existence of God, possess such a way, but it is closed to Bergson himself who refuses to recognize the value of conceptual knowledge, who, though he will not deny all value to the traditional proofs of the existence of God, insists that such value as they possess is due to an implicit appeal to intuition, and who therefore, when he attempts to estimate the value of the testimonies which we can gather from the concordant experiences of the mystics, honestly confesses that by accumulation they constitute merely "a sum-total practically equivalent to certainty". (p. 237)

We must now turn to the question which we raised at the beginning of this paper and see whether the twenty years of reflection which Bergson has devoted to the problem of God have marked a progress in his conception of God, whether he has succeeded in disengaging himself from the monism which was latent in his interpretation of *Creative Evolution.* Bearing in mind such passages of that work as the following:

Everything is obscure in the idea of creation if we think of *things* which are created and a *thing* which creates, as we habitually do, as the understanding cannot help doing. . . . There are no things, there are only actions. More particularly, if I consider the world in which we live,

[10] *Praelectiones Theologiae Naturalis,* Tome II, p. 418.

I find that the automatic and strictly determined evolution of this well-knit whole is action which is unmaking itself, and that the unforeseen forms which life cuts out in it, forms capable of being themselves prolonged into unforeseen movements, represent the action that is making itself. . . . Now, if the same kind of action is going on everywhere, whether it is that which is unmaking itself or whether it is that which is striving to remake itself, I simply express this probable similitude when I speak of a centre from which worlds shoot out like rockets in a fire-work display—provided, however, that I do not present this centre as a *thing*, but as a continuity of shooting out. God thus defined, has nothing of the already made; He is unceasing life, action, freedom. Creation, so conceived, is not a mystery; we experience it in ourselves when we act freely.[11]

Cardinal Mercier could write: " Le devenir bergsonien est, bon gré mal gré, panthéistique ".[12]

No doubt one can glean in the *Two Sources* a number of texts in which are stressed the distinction between God and his creatures, and more specifically the divine transcendence. The mystic soul, without stopping to ask " whether the principle with which it is now in touch is the transcendent cause of all things or merely its earthly delegate, would be content to feel itself pervaded, *though retaining its own personality*,[13] by a being immeasurably mightier than itself ". (p. 201) The philosopher may hold " God to be a person " and yet wish to avoid " anything like a gross assimilation to God ". (p. 241) To him " Creation will appear as God undertaking to create creators, that He may have, besides Himself, beings worthy of His love ". (p. 243) These beings who were destined to love and to be loved, since creative energy is love, are " distinct from God, Who is this energy itself ". (p. 246) Finally we are invited to question the experience of the mystics to find out " what it has to teach us of a Being Who transcends tangible reality as He transcends human consciousness ". (p. 250)

[11] *Creative Evolution*, p. 248.
[12] *Revue Néoscolastique*, " Vers l'Unité ", vol. XX, 1913, pp. 253-278.
[13] Italics ours.

But on the very page on which Bergson describes "the whence and the whither of life", (pp. 245-246) the sharp distinction which we are wont to make between creator and creature does not appear. If we are invited to contemplate "the original impulsion splitting into different lines of evolutionary progress, instead of remaining undivided to the end", it seems that "the current of life which traverses matter, and which accounts for its existence" is a mere emanation from the deity. "Granted the existence of a creative energy which is love, and which desires to produce *from itself* beings worthy to be loved, it might indeed sow space with worlds whose materiality, as the opposite of divine spirituality, would simply express the distinction between created and creating, between the multifarious notes, strung like pearls, of a symphony and the indivisible emotion from which they sprang". Upon which P. de Tonquédec asks: "Is that the only distinction between God who is the vital impetus itself and his creature? . . . between God and the world, between the current of life, pure and free at its source, and the same current, in its course through the world, weighted and hindered by matter"?[14] Moreover, if we recall the passage of *Creative Evolution* quoted above, in which we are asked to look upon God not as a thing, but "as a continuity of shooting out", as "nothing already made" but as "unceasing life, action, freedom"; if we recall the insistence with which Bergson urges us to consider the Absolute as possessed "of psychological and not of mathematical nor logical essence", because "it lives with us. Like us, but in certain aspects more concentrated and more gathered up in itself, it *endures*";[15] if we read attentively the pages of the *Two Sources* (pp. 232-233) in which he criticizes Aristotle's metaphysical God, which has been adopted by most of his successors with a few modifications, the conviction is forced upon us that Bergson

[14] *L. c.*, p. 649.
[15] *Creative Evolution*, p. 299.

is as far from the theistic conception of God as the evolutionary pantheists whom he boasted he had refuted. Here is that capital text:

> The real is mobile, or rather movement itself, and we perceive only continuities of change; but to have any action on the real, and especially to perform the constructive task which is the natural object of human intelligence, we must contrive to have halts here and there, just as we wait for a momentary slowing down or standing still before firing at a moving target. But these halts, each of which is really the simultaneousness of two or more movements and not, as it seems to be, a suppression of movement, these qualities which are but snapshots of change, become in our eyes the real and essential, precisely because they are what concerns our action on things. Rest then becomes for us something anterior and superior to movement, motion being regarded only as agitation with a view to a standing still. Thus immutability is rated higher than mutability, which implies a deficiency, a lack, a quest of the unchanging form. Nay, more, it is by this gap between the point where a thing is and the point where it should be, where it aspires to be, that movement and change will be defined and even measured. On this showing, duration becomes a debasement of being, time a deprivation of eternity. This whole system of metaphysics is involved in the Aristotelian conception of Deity. It consists in deifying both the social work which paves the way for language and the individual work of construction which needs patterns and models: the εἶδος (Idea or Form) is what corresponds to this twofold work; the Idea of Ideas or Thought of Thoughts is therefore Divinity itself. With the origin and meaning of Aristotle's God thus traced back we can but wonder how modern thinkers, when treating of the existence and nature of God, hamper themselves with insoluble problems which arise only if God is studied from the Aristotelian point of view, and if they are pleased to call by that name a being whom mankind has never dreamed of invoking.

This distrust of the "metaphysical" attributes of God Bergson ascribes to the mystic who, he says, "has nothing to do with properties which are mere negations and can only be expressed negatively; he believes that he sees what God is, for him there is no seeing what God is not". (p. 240) In one stroke of the pen he brushes aside the teaching of the Vatican

Council, but he is logical and consistent with the position he has taken from the beginning, and which he expressed in unmistakable terms in 1915, in a letter to Professor Kallen, which was published in *The Journal of Philosophy, Psychology, and Scientific Methods*,[16]

> In a general way, you have, it seems to me exaggerated the transcendental elements of my doctrine. No doubt you are right in saying that I am nearer than James to traditional metaphysics; you have even divined my sympathy for Plotinus, a sympathy which I never had an opportunity to express in my books, but which is well known to those who follow my courses. But I fear you have misunderstood the relation which I establish between 'duration' and 'eternity'. Far from interpreting duration in terms of the eternity of the ancient philosophers, it is eternity as they conceive it, that I have sought to bring down from the heights it occupied to duration, that is to something which grows, which enriches and creates itself indefinitely. On the other hand it is not true that I admit the existence of an absolute reality, distinct from appearances, as does traditional metaphysics. On the contrary, for me all that we perceive is an absolute reality. Only it is a reality which has to be completed by us . . . and the object of philosophy is to arrive at a knowledge of that reality more complete than what we generally call by that name, though it has not another nature, since it contains it as the whole contains its parts. . . . One of the main objects of my works has been to show . . . that the phenomena taken integrally, i. e, replaced in real duration, are truly an absolute, this absolute being possessed of such a nature that necessarily it lends itself to intellectual or mathematical knowledge, when it is matter, and to intuitive knowledge when it is life or spirit.

Is it to be wondered that, in spite of the intentions of the author, Bergson's theodicy fails to meet adequately the double charge of agnosticism and pantheism? When analysing the content of the mystical experience, Bergson comes to the definition of God as "Love and Object of love", a very true definition. But the fact that he denies all intellectual value to the concept

[16] *The Journal of Philosophy, Psychology and Scientific Methods*, vol. XII, No. 22, Oct. 28, 1915, pp. 615-616. The letter to Prof. Kallen was occasioned by his book *William James and Henri Bergson*.

of God, makes this definition radically unintelligible and robs it of its truth. He has reduced metaphysics to the level of psychology, but, while one may admire the keenness of his analyses, and while metaphysics must remain in close contact with living reality and not be satisfied with pure abstractions, it is only in the light of metaphysics and upon metaphysical principles that genuine religion and genuine mysticism can be founded. In the words of P. de Tonquédec: "A philosophical method which is based exclusively on experience and deliberately ignores the field of reason, forbids the thinker to rise above a certain level and leads him to a lack of appreciation of genuine spirituality. An intransigent theory of universal and absolute mobility which reduces being to a movement without substance and without end, blinds the philosopher to the most fundamental and the most authentic realities".[17] Nevertheless, we do not hesitate to join in the tribute which the same inspiring but sympathetic critic pays to the French philosopher and to recognize, in spite of the deficiencies of the *Two Sources*, a real advance from the position he had taken in *Creative Evolution*. His discovery and his appreciation of Christian mysticism are significant. Is it rash to hope that, in his earnest search for truth in the field of morality and religion, his great intelligence and his noble soul, which stand so clearly revealed in his latest work, may one day bring him to the full light of truth?

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[17] *Études*, 5 avril 1933, p. 53.

THE LOCATION OF QUALITATIVE ESSENCE

I: Aristotle and Aquinas

PERENNIAL in character as is the subject of the location of qualitative essence, there are reasons why a study of it is especially timely at present. Recent incursions of psychologists, physicists and mathematicians into the domain of philosophy have caused both discussion and confusion. Their quest for certainty has brought them into the realm of epistemology. Arriving there equipped with the tools of their professions—correlations, experiments and symbols—they find these tools helpful in a new field. Helpful as these tools may be, they are yet only instruments to be employed by our natural faculties of knowledge: they can never rightly displace those faculties. Yet this substitution has in many instances been attempted in the name of science, and the result has been neither certainty nor certitude, but rather confusion. A part of this confusion is found in the narrower sphere of qualitative essence. Consequently, there is need of restating an older and sounder doctrine on the location of qualitative essence. In addition to such a restatement, a fuller understanding of the present situation necessitates a consideration of at least one of the recent theories on the subject. With this in mind, the doctrine of Émile Meyerson has been analyzed and its affinity to the doctrine of John Locke noted. Finally, reasons for the rejection of Meyerson's theory are advanced.

The problem of the location of qualitative essence is in the field of epistemology. It is beyond the scope of this essay to undertake a psychological analysis of the problem, much less to enter into the physical and physiological aspects of the problem. While it is strictly speaking an epistemological study, it necessarily rests on a sound metaphysics. Investigation therefore begins with a study of substance and essence, and thence pro-

ceeds to a study of substance and accidents. Among the accidents is found the category of quality. The next step is to determine whether this quality—we limit our study to the sensible qualities—has an essence. This decided, we proceed to its location. Such is the procedure followed in an attempt to summarize the doctrines of Artistotle, St. Thomas, the Neo-Scholastics, John Locke, and Émile Meyerson, on this subject.[1]

Aristotle's teaching on the location of qualitative essence was accepted by St. Thomas Aquinas and is today held by modern Scholastics. According to this doctrine, every sensible quality is an external reality, having its own *esse physicum*, not as substance has, but an *esse secundum quid*. Besides being entities *in actu*, the sensible qualities are also powers, entities *in potentia* to a percipient subject. In this latter case they have a second actuality in the percipient subject. John Locke locates the primary qualities in an unknown, external substance, but reduces the secondary qualities to subjective sensations in the percipient subject, caused by the primary qualities. As a result

[1] The most complete treatment of this problem by Aristotle is found in the *De Anima*. The metaphysical foundation is found principally in the *Metaphysics* and the *Categoriae*. St. Thomas treats the problem most completely in his commentary on the *De Anima* of the Philosopher, and in the *De Homine* and in the *Summa Theologica*. The metaphysical background is most concisely given in the opusculum *De Ente et Essentia*. For the modern Scholastic views on this subject the works of Cardinal Mercier, Peter Coffey, Albert Farges, John O'Neill, Désiré Nys, Thomas Harper, and Leslie Walker, were especially helpful. Of necessity the study of John Locke's theory was based on his *Essay Concerning the Human Understanding*. The statement of Émile Meyerson's view is based entirely on a study of his own Epistemological work, *Identité et Realité*. In the interpretation of M. Meyerson's theory we have been aided by the critical analyses of his philosophy by George Boas, André Metz, Henri Sée, and Karl Herzfeld.

References given hereafter are to the following editions. Aristotle: *The Works of Aristotle Translated into English*, edited W. D. Ross. (Oxford, 1908-1931); *Categoriae*, trans. by E. M. Edgehill. (Oxford, 1928); *De Anima*, trans. by J. A. Smith. (Oxford, 1931); *De Sensu et Sensibili*, trans. by J. I. Bears. (Oxford, 1908); *Metaphysics*, trans. by W. D. Ross. (Oxford, 1908). St. Thomas: *Opera Omnia*, Vives edition. (Paris, 1880).

of his mechanistic system Émile Meyerson makes all sensible qualities mere subjective sensations, caused by the various groupings and arrangements of atoms.

. . . . . .

In Aristotle's *Categoriae* substance in its truest and most definite sense is found to be that which can neither be predicated of, or present in a subject or stratum,[2] "otherwise than as parts in a whole."[3] Everything that is not substance, that is, all the other categories, is predicated of substance as subject.[4] A further distinction is made by declaring that primary or first substance—those entities which underlie everything else—are most properly called substances.[5] They are distinguished from genera and species, which are called secondary substances.[6] Nor does this view of primary substance make prime matter a complete substance, since both separability and thisness belong chiefly to substance; consequently, the compound of form and matter is substance, rather than matter alone.[7] "Therefore that which *is* primarily and is simply (not 'is something') must be substance."[8] Substance is first in time, for of all the categories, only substance is independent; first in formula, for in the formula of a term, the formula of its substance must be present; and first in knowledge, for we know a thing most fully when we know what it is, rather than when we know its qualities or quantity.[9] Aristotle gives four other marks of primary substances: (1) Every primary substance is indisputably individual; (2) It admits of no varying degrees within itself; (3) It has no contrary; (4) Finally, the most distinctive mark of substance—it is capable of admitting contrary qualities while remaining numerically one.[10]

[2] *Cat.*, 5, 1b, 11-12.
[3] *Cat.*, 5, 3a, 32.
[4] *Phys.*, I, 185a, 31.
[5] *Cat.*, 5, 2b, 16.
[6] *Cat.*, 5, 1b, 19.
[7] *Meta.*, VII, 1092a, 26-30.
[8] *Ibid.*, 1028a, 30.
[9] *Ibid.*, VIII, 1028a, 32-34.
[10] *Cat.*, 5, 3b-4a.

Our knowledge of substance, according to Aristotle, is determined by our knowledge of essence. Thus he says, "The essence of each thing is what it is said to be *propter se*." [11] What a thing is by its very nature is its essence. The concrete individual thing is composed of matter and form.[12] For if there were nothing but matter there would be only objects of sense and no knowledge, unless sensation be considered knowledge. Forms and prime matter, out of which the elements come to be, are eternal, yet the latter has no separate existence, but is always determined by a form.[13] "If there is nothing eternal neither can there be a process of coming to be; for that which comes to be, and that which it comes to be, must be something, and the ultimate term in this series cannot have come to be, since the series has a limit and nothing can come to be out of that which is not." [14] An element is a simple body which can not be divided into bodies different in form; all other bodies are composites of the elements.[15] The four elements which can be reduced to the common substrate, prime matter, are fire, water, earth, and air.[16] It follows then that even these elements are substances constituted of matter and form. In their case, as in that of every primary substance, the actuality of their potentiality is identical with the "formulable essence." [17] This means that, while prime matter is considered the passive element, capable of determination, the form is the incorporeal element, or determining principle, which gives first substance its particular existence and nature.

The remaining nine categories of Aristotle, quantity, quality, relation, place, time, position, state, action, and passivity, comprise those objects of thought known as accidents. Accidents do not naturally subsist in themselves, but are present in first

[11] *Meta.*, IV, 1029b, 14.
[12] *Ibid.*, XII, 1070a, 9-13.
[13] *Gen. & Cor.*, II, 329a, 35 ff.
[14] *Meta.*, III, 999b, 5-9.
[15] *De Caelo*, III, 302a, 15 ff.
[16] *Meteor.*, I, 339b, 1-2.
[17] *De Anima*, II, 415b, 14.

substances.[18] The Philosopher was careful to explain that by being "present in a subject," he did not mean as the parts are present in a whole, or as the contained is in the container, but being incapable of existence apart from the subject.[19] The accidents are forms; accidental forms attached to the subject, but not necessarily, that is, not because it is this subject.[20] No individual substance requires an accidental form to complete its essence. An accident may inhere immediately in another accident, but even then, both are accidents of the same substance.[21] This union of substance and accidents, though not substantial, since the accidents do not belong to the essence, is not merely a mechanical union. The accidental forms are present in the substantial form potentially, and all change in the accidents of a substance is explained on the basis of potentiality and actuality.[22]

Our concern is with the category of quality. By quality Aristotle means that in virtue of which a thing is said to be such and such.[23] Only with reference to quality are things said to be like and unlike. This is the distinctive mark or peculiar note of quality,[24] and for this reason quality is the essential difference, or differentiating mark.[25] Quality is used in four senses: (1) to denote habit or disposition, the first being a more permanent condition than the latter; (2) those terms which refer to inborn capacity or incapacity, and which the Schoolmen called "potentia naturalis" and "passiones"; (3) affective qualities and affections, known to the Scholastics as "potentiae passivae" and "passiones." The former are so called because they are capable of producing an affection in way of perception, for example, sweetness. Affections are so called because they themselves are the results of an affection, for example,

[18] *Categoriae*, 5, 2a, 34.
[19] *Ibid.*, 1, 1a, 23.
[20] *Metaphysica*, V, 1025a, 21-23.
[21] *Ibid.*, IV, 1007b, 3.
[22] *Ibid.*, XII, 1069b, 7.
[23] *Categoriae*, VIII, 8b, 25.
[24] *Ibid.*, IX, 11a, 15-17.
[25] *Metaphysica*, V, 1020a, 33.

whiteness; (4) the figure or shape that belongs to a thing is also a quality.[26] The accident of quality differs further from substance in admitting both variation of degree and contraries. Accident is a real being, having its own essence distinct from the essence of the substance. Substance is more truly being, in so far as it has its being in itself, while accident has its being in another. Therefore an accident is said to have an essence, not as a substance, but in a secondary and limited manner, for even an accident may be defined, though not in the simple sense.[27]

With this background we are prepared to consider the problem of the location of quality. In other words, Where is the essence of quality, (quality *qua* quality)? In this investigation only those qualities included in Aristotle's third and fourth classes, and generally known as the sensibles, or sensible qualities, will be considered. Color, sound, taste, smell, and those qualities discriminated by the sense of touch, such as hotness, smoothness, coldness, and their contraries; as well as movement, rest, number, figure, and magnitude, which are perceptible by touch and sight altogether. These last five, Aristotle calls the "common sensibilities," while the others are special objects of this or that particular sense.[28] Let us recall here the fact that for the Philosopher all qualities are accidents. Now it is of the nature of accidents to inhere in a subject. Hence he can place the essence of quality in the object perceived, in the medium, or in the subject perceiving. In the *Categoriae*, Aristotle leaves no doubt as to his choice, for he writes: "But the annihilation of perception does not involve that of the perceptible. For if the animal is annihilated, it follows that perception is also annihilated, but perceptibles such as body, heat, sweetness, bitterness, and so on, will remain."[29] It is interesting to note that Aristotle must have viewed this problem from different angles

[26] *Categoriae*, 8.
[27] *Metaphysica*, X, 1030a, 19 ff.
[28] *De Anima*, III, 426a, 20-22.
[29] *Categoriae*, 7, 8a, 2-6.

and that he took into consideration the solutions given by his contemporaries. In *De Anima* he says: "The earlier students of nature were mistaken in their views that without sight there was no white or black, without taste no savour." [30]

It is in the refutation of this theory that we find Aristotle's important distinction between potentialities and actualities in this problem of locating qualities. In his usage, the term "sense" and "sensible objects" are ambiguous, denoting either potentialities or actualities. For example, were one to say that without sight there is no white or black, without taste, no savour, the statement would be partly true, partly false. It would be true in so far as there would be no actual white or black, or taste; but false, inasmuch as there would be potentially white or black, or taste.[31] The substratum or essence of every sensible object contains in itself the cause of its sense qualities. But in order to make these sense qualities (*qua* sense qualities) actual a medium (except for taste)[32] and a percipient subject are necessary. This is illustrated in the case of color. Color is that quality which has the power to set in motion what is actually transparent. Hence without some such medium, as air or water, sound remains always *in potentia.*[33] Moreover, "both sound and the hearing so far as it is actual must be found in that which has the faculty of hearing." [34] Further on, as if to emphasize this oneness of actuality, we find, "The actuality of the sensible object and of the sensitive subject are both realized in the latter." [35] This explanation is terminated with the reminder and the caution that "as potentialities one of them may exist without the other." [36] This

[30] *De Anima*, III, 426a, 20-22.

[31] *Loc. cit.*, 426a, 23-26.

[32] "In the case of taste, there is nothing corresponding to the medium in the case of the senses previously discussed; . . . But nothing excites a perception of flavour without the help of liquid." *De Anima*, II, 422a, 15-17.

[33] *De Anima*, II, 418b, 1-3.

[34] *Ibid.*, III, 426a, 2, 3.

[35] *Loc. cit.*, 426a, 11.

[36] *Loc. cit.*, 426a, 20.

then, is Aristotle's answer to the oft repeated and ever recurring question: "Would there be sound, if there were no one to hear it?"

In conclusion we may say that in order to state completely Aristotle's solution to the problem of the location of sensible qualities, it is necessary to consider these qualities under two aspects. In the first place, the sensible qualities are real affections of external, substantial objects.[37] As qualities, they actually subsist in an external substance. Therefore, considering a sensible quality as an affection of an external object, its essence must be localized in that object. Besides being affections of substance, sensible qualities are also powers, which by their nature set in motion some medium.[38] This medium in motion affects a sense organ *in potentia* to the particular motion, and reduces it to actuality.[39] Hence considering a sensible quality as an active power of an external object, it is evident that in Aristotle's treatment it receives its actuality in the passive, percipient sense organ.[40] However, we must note that this latter actuality is distinct from the first actuality, which is really and truly an actuality subsistent in the external object. Aristotle leaves no doubt on the proposition, that what is perceived by, and exists in, the sense, is formally the same as that which pre-exists in the external object.[41]

> By a 'sense' is meant what has the power of receiving into itself the sensible forms of things without the matter. This must be conceived of as taking place in the way in which a piece of wax takes on the impress of a signet ring without the iron or gold; we say that what produces the impression is a signet of bronze or gold, but its particular metallic constitution makes no difference: in a similar way the sense is affected by what is coloured or flavored or sounding, but it is indifferent what

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[37] *De Sensu et Sensibili*, IV, 441b, 16-24.
[38] *De Anima*, II, 421a, 9.
[39] *Ibid.*, II, 423b, 34 ff.
[40] *Ibid.*, III, 425b, 26-30.
[41] *Ibid.*, III, 426a, 15, 16.

in each case the substance is; what alone matters is what *quality* it has. . . .[42]

. . . . . .

St. Thomas's doctrine on this problem of the location of qualitative essence is thoroughly Aristotelian. He accepts *in toto* the Categories of the Philosopher, and his division of them into the two general classes of substance and accident. Substance alone fully is, while accident has a diminished being. "Substance is a reality to the nature of which it is due that it should not exist in another."[43] It is being which exists in itself. St. Thomas divides substance into simple substances and composite substances.[44] Simple substances are the human soul, intelligences or angels, and the First Cause, God. In God there is no composite of any kind; He is pure act. In the human soul, and in a separated intelligence there is a composition merely of form and existence,[45] or essence and existence. On the other hand, material substances or bodies are made up of matter and form.[46] Neither the prime matter alone, nor the substantial form alone of material bodies is a complete substance, and hence with the one exception of the human soul, the substantial form of the body, they cannot exist independently outside of the composite. "Primordial matter was created neither wholly without form, nor under one common form, but under distinct forms."[47] In this St. Thomas differs from Aristotle, who did not attribute the origin of prime matter to creation, but taught that it was co-eternal with the Prime Mover.[48] Prime matter is real but it is impossible for it to

[43] *Ibid.*, II, 424a, 17-24.
[43] *Quodl.*, 9, a. 5, ad. 2.
[44] *De Ente et Essentia*, C. I.
[45] *Ibid.*, C. IV.
[46] *Ibid.*, C. II.
[47] *Sum. Theol.*, I, q. 66, a. 1, c. Unde oportet dicere, quod materia prima neque fuit creata omnino sine forma, neque sub forma una communi, sed sub formis distinctis.
[48] *Metaphysica*, 1071b ff.

subsist without a substantial form.[49] While in no case can prime matter exist independently, there are, however, simple subsistent forms, for example God and angels, who are entirely independent of matter. The human soul is the only form of a body which can subsist independently of matter. The essence of a simple substance is form alone, while the essence of a material substance embraces form and matter. According to St. Thomas, following Aristotle, essence is the "*quod quid erat esse*," or "that by which a thing is something."[50] Inasmuch as the essence is the source of the thing's activity, it is called a nature.[51] It is through the essence that a being has its existence. Since the essence is what constitutes a being in its proper genus and species, and is thus signified in its definition, St. Thomas also calls the essence the quiddity.

In his teaching on accidents the Angelic Doctor continues with Aristotle as guide. "An accident is that whose being is to exist in something else.[52] The fact that St. Thomas teaches that, "an accident should be described as of something rather than as something"[53]—*ens entis*—does not mean that he wishes to cast any shadow of doubt upon the reality of the being of accidents. Being is predicated primarily of substance but secondarily as it were in a qualified sense (*secundum quid*) of accidents.[54] Since accidents can be defined they must have an essence, for it is the essence of a being which is signified in a

[49] Quaecumque enim ita se habent ad invicem quod unum est causa esse alterius, illud quod habet rationem causae potest habere esse sine altero, sed non convertitur. Talis autem invenitur habitudo materiae et formae, quod forma dat esse materiae, et ideo impossibile est esse aliquam materiam sine forma; tamen non est impossibile esse aliquam formam sine materia. *De Ente et Essentia*, C. V.

[50] *Ibid.*, C. 1.

[51] *Sum. Theol.*, I, q. 39, a. 2, ad. 3. Essentia et natura sunt idem re, et differunt ratione: quia essentia est principium essendi, sed natura est principium operationis.

[52] *De Potentia*, a. 7.

[53] *Sum. Theol.*, I, q. 90, a. 2, c.

[54] *De Ente et Essentia*, C. I.

definition. However, their definition is incomplete for they cannot be defined unless a subject is brought in in defining them. Neither do the accidents cause the primary existence of the subsistent subject, but only a secondary existence, that is, by means of accidents a subject is reduced from potentiality to act.[55] Nor does the union of accidents and subject produce a new substantial unit. Only an accidental union is produced and consequently "accident has not the nature of a complete essence, nor is it a part of a complete essence, but just as it is being only in a qualified sense, so too it has essence in a qualified sense."[56] Finally it should be noted that while it is of the essence of an accident in the natural order to inhere in a substance, as in a subject, directly or indirectly, St. Thomas also teaches, that by the power of God the accidents of quantity can exist without a subject.[57]

Not only does St. Thomas accept the nine accidents of Aristotle, but in considering the category of quality he also adopts Aristotle's fourfold division. As already pointed out, we are concerned with the third and the fourth of these divisions, known as the proper sensibles and the common sensibles respectively. All quality implies a certain mode of substance or a certain determination according to a certain measure.

[55] Sicut esse non est formae, sed subjecti per formam, ita nec fieri, quod terminatur ad esse, est formae sed subjecti. Sicut enim forma ens dicitur, non quia ipsa sit, si proprie loquamur, sed quia aliquid ea est; ita et forma fieri dicitur, non quia ipsa fiat, sed quia ea aliquid fit, dum scil. subjectum reducitur de potentia in actum. *De Virt.* in Communi, Q. 1, a. 2, c.

[56] *De Ente et Essentia*, C. VI. Also: Cum ista accidentia habeant esse et essentias proprias, et eorum essentia non sit eorum esse constat quod aliquid est in eis et quod est. In 4, d. 12, Q. 1, a. 1, q. 3, ad. 5.

[57] Et ideo relinquitur quod accidentia in hoc sacramento manent sine subjecto, quod quidem virtute divina fieri potest: cum enim effectus magis dependeat a causa prima quam a causa secunda, Deus, qui est prima causa substantiae et accidentis, per suam infinitam virtutem conservare potest in esse accidens subtracta substantia per quam conservabatur in esse sicut per propriam causam; sicut etiam alios effectus naturalium causarum potest producere sine naturalibus causis, sicut humanum corpus formavit in utero Virginis sine virili semine. *Sum. Theol.*, III, q. 77, a. 1, c.

Now, "that in accordance with which, the potentiality of the subject is determined to its accidental being, is called an accidental quality." [58] Qualities determine a substance to some more definite quiddity. In his discussion on properly distinguishing five exterior senses, St. Thomas teaches that the different senses have their own proper sense organs which are adapted for various potentialities. Now these potentialities are reduced to actuality by exterior causes and it is according to the diversity of exterior causes that the external organs are diversified.[59] Corresponding then to each of the senses there is a proper sensible quality. These are the five proper sensibles of color, odor, sound, taste and touch. The common sensibles, which are the object of more than one sense, are size, shape, number, movement, and rest. These last St. Thomas reduces to quantity, which is considered the fundamental attribute of matter. He also shows quantity to be the proximate subject of all the qualities that cause alteration, for example, "Shape is a quality about quantity, since the notion of shape consists in fixing the bounds of magnitude." [60] Therefore, these common sensibles do not move the senses directly, but by reason of the inherent quality, as the surface by reason of color. This does not mean though that the common sensibles are merely *sensibilia per accidens*, for sense is truly immuted differently by a large and by a small surface. These then are the qualities whose essence we are to locate.

St. Thomas and Aristotle treat this problem of location in the same way, that is, quality is viewed under two aspects, as

[58] *Sum. Theol.*, Ia IIae, q. 49, a. 2, c.

[59] Accipienda est ergo ratio numeri et distinctionis exteriorum sensuum, secundum illud quod proprie et per se ad sensum pertinet. Est autem sensus quaedam potentia passiva, quae nata est immutari ab exteriori sensibili. Exterius ergo immutativum est quod per se a sensu percipitur, et secundum cujus diversitatem sensitivae potentiae distinguuntur. *Sum. Theol.*, I, q. 78, a. 3, c.

[60] *Sum. Theol.*, I, q. 78, a. 3, ad. 2. Also cf. Charles A. Hart, *The Thomistic Concept of Mental Faculty* (Washington, 1930), pp. 74-76.

a potentiality and as an actuality. Here is found an admirable illustration of Thomas's ability to clarify the doctrine of Aristotle. As a fundamental of Thomistic teaching we can begin with the principle, "A quality has no existence, save that which it has in the subject." [61] Quality *qua* quality is present in the external object; it is present there in its essence. St. Thomas does not hold that the quality is merely present in the object in such a way as to be the cause of an effect altogether different from the cause. Such is the Democritean doctrine. But St. Thomas does teach that Democritus proceeded quite irrationally in representing all objects of sense-perception as tangibles and so reducing the proper to the common sensibles, for example, reducing colors and tastes to size and shape.[62] Again he says:

> The earlier speculators on nature were not correct in saying that nothing is white or black except when seen, that nothing is savoury except when tasted, and similarly in reference to the other sensibles and senses. . . . They believed that everything is, and the truth of things is, in their capability of being perceived by the senses. . . . However in one way they are right and in another way they are wrong. The sense organ and the sensible object have each of them a twofold meaning inasmuch as they may mean either that which exists potentially or that which exists actually. Now the teaching (of these earlier speculators) is true with reference to the actuality of the sense organ and the sensible object. But they spoke absolutely, that is, without making a distinction in reference here to topics that have more than one meaning.[63]

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[61] Non est aliquod esse qualitatis, nisi quod habet in subjecto. *De Virtutibus* in Communi, Q. 1, a. 2, c.

[62] *De Sensu.*, Lect. 9.

[63] Quod priores naturales non bene dicebant in hoc, quia opinabantur nihil esse album, aut nigrum, nisi quando videtur; neque saporem esse, nisi quando gustatur; et similiter de aliis sensibilibus et sensibus. . . . Credebant quod totum esse et veritas rerum esset in apparere. . . . Dicebant autem quodam modo recte et quodam modo non. Cum enim dupliciter dicatur sensus et sensibile, scilicet secundum potentiam et secundum actum, de sensu et sensibili secundum actum accedit quod ipsi dicebant quod non est sensibile sine sensu. Non autem hoc verum est de sensu et sensibili secundum potentiam. Sed ipsi loquebantur simpliciter, id est sine distinctione, de his quae dicuntur multipliciter. *De Anima*, Lib. III, 2.

Here we see that an unperceived sensible quality has a real existence in both the external object and the sense organ, but is only an existence in potentiality and not an actual existence. Hence the following comment on the passage has rightly been made: "Only a decided misinterpretation of the thought of St. Thomas can see in his *actus et potentia* distinction a denial of the real objectivity of primary and secondary qualities." [64] This becomes quite evident in the light of the double meaning which St. Thomas gives for the word "actuality" as applied to the sensible qualities.

Every sensible may be said to be in actuality in two ways. One of these ways of being in actuality occurs when the proper sensible is actually perceived, that is, when its form is in the sense organ: and in this way sound exists as an actuality when it is being heard. A second way of being in actuality, for the proper sensibles (other than sound) are in actuality in sensible bodies—color, for instance, in the colored body, odor in the odoriferous body, savor in the savory body. The case of sound is different: sound is merely in potency in the sounding body; it is in actuality within the medium which is changed by the vibration of the sounding body; and that is why the actuality of sound is said to belong to the medium and to hearing, but not to the sounding body.[65]

In the above passage we also find the one point of difference between Aristotle and St. Thomas on this problem. Both agree that the essence of sound is in the medium—air or water—rather than in the bodies impinging or impinged upon. There is indeed local motion, i. e., vibrations in these bodies, but sound

[64] Edward F. Talbot, *Knowledge and Object* (Washington, 1932), p. 47.

[65] Omne enim sensibile dupliciter dicitur esse in actu. Uno modo, quando actu sentitur: hoc est dum species ejus est in sensu: et sic sonus est actu, secundum quod est in auditu. Alio modo secundum quod habet propriam speciem, per quam, sentiri potest, prout est in subjecto; et sic alia sensibilia flunt in actu, prout sunt in corporibus sensibilibus, sicut color prout est in corpore colorato, odor et sapor prout sunt in corpore odorifero et saporoso. Sic autem non est de sono. Nam in corpore sonante non est sonus, nisi in potentia. In medio autem quod movetur ex percussione corporis sonantis, fit sonus in actu. Et proper hoc dicitur, quod sonus in actu est medii et auditus, non autem subjecti sonabilis. *De Anima*, Lib. II, 16.

as quality is in the medium. The vibrating bodies are the cause of movement in the medium. The Philosopher says: "What has the power of producing sound is what has the power of setting in movement a single mass of air which is continuous from the impinging body up to the organ of hearing." [66] However, further on Aristotle seems to identify the local movement of the air and sound itself, for he writes, "Air in itself is, owing to its friability, quite soundless; only when its dissipation is prevented is its movement sound." [67] St. Thomas maintains [68] that sound as a proper sensible is not merely the vibration of matter. When he finds Aristotle defining voice as the percussion of air, he points out this definition is rather a definition of the cause of sound; voice is not a percussion but a sound caused by a percussion.

Thus we see St. Thomas is one with Aristotle in concluding that the sensible qualities have two actualities; one actuality as a distinct accident inhering in an external object (or as in the case of sound, in the medium); another actuality as a sensible form existing in the external sense organ. In the latter case the sensible quality is to be looked upon as a cause effecting the actuality of the sensible quality in the sense organ as subject. But this is truly a second actuality separate and distinct from the actuality of the quality in the external object as substrate.[69] In fact both St. Thomas and Aristotle are so decisive on this point that they point out that the Greek language has not in all instances distinct names for these two actualities.[70]

. . . . . .

Scholastic philosophers have adopted the ten categories of St. Thomas and Aristotle. Likewise they accept the division

[66] *De Anima*, 420a, 2, 3.
[67] *Ibid.*, 420a, 6, Aristotle.
[68] *De Anima*, 11, 16, 17, 18.
[69] *De Anima*, Lib. III, 2.
[70] Nominatus est uterque actus, et sensibilis ut sonatio, et sensitivi, ut auditio. In quibusdam autem unum tantum nominatum est, scilicet actus sensitivi. Visio enim dicitur actus visus, sed actus coloris non est nominatus. *De Anima*, Lib. III, 2. Aristotle: *De Anima*, III, 425b, 11-15.

of all real being into substance (the first category) and accidents (the remaining nine categories). Substance exists in itself; its proper perfection consists in intrinsic independence of a subject, which means that the complete substance inheres in no material cause—*id ex quo aliquid fit, id in quo aliquid recipitur.*[71] Since the time of Descartes, Scholastics have taken pains to point out that substance is not independent of an efficient cause—*id a quo aliquid est.* All material substances, also called bodies, are composites of prime matter and substantial form. Prime matter is real, but pure potentiality and hence cannot exist apart from some form. For this reason it is said to co-exist rather than to exist. This doctrine was held by Peter the Lombard, St. Thomas, St. Bonaventure, and the rest of the Scholastics, with the exception of Scotus, Suarez, and a few others.[72] These latter maintain that the separate existence of prime matter apart from a substantial form is not a metaphysical impossibility. However, all are agreed that as a fact prime matter was concreated in the beginning with its substantial and accidental forms. Of all the forms of material substances only the human soul can exist in a state of separation from prime matter. The ordinary man believes that many of the things about him are fundamentally different kinds of matter, that is, different in the very nature or substance of their constituents. Moreover, he believes there are material changes which affect the nature of things and bring about the existence of new substances without annihilation and creation. Scholastics teach that these beliefs are grounded on the reasonable theory of Prime Matter and Substantial Form. Briefly, the explanation is this: prime matter is undifferentiated potentiality while substantial forms are different determining principles. According as different substantial forms inform prime matter there

[71] D. Mercier, *Ontologie* (Paris, 1910), p. 270.

[72] Thomas Harper, *Metaphysics of the School* (London, 1881), Vol. 1, p. 337.

are different substances. In substantial change there is no change in prime matter itself but a new substantial form actualizes it. The new form is educed out of the potentiality of prime matter and the old form receded into the potentiality of prime matter.[73]

The traditional teaching of the Scholastics on essence is one with the Thomistic doctrine. The essence is the answer to the question, What is it? It is defined as the *id quo res est id quod est.*[74] It is not essential for substance, as it is in itself, to be a support of accidents, the source of energy, or to have permanence of duration. Existence-in-itself—*esse in se*, even though only momentary, none the less for that moment verifies substance.[75] The essence of an accident is not actual inherence in substance but an aptitudinal inherence—*inhaerentia aptitudinalis.*[76] In so far as accidents follow the natural law they have their existence in another—*esse in alio.* But by the power of God, for example, as it is exercised in the Blessed Sacrament, the accident of quantity exists without a substance as subject of inhesion and the other sensible qualities continue to exist in the quantity as subject.[77] The case of such accidents whose entities remain throughout a substantial change presents no valid argument against the essential inherence of accidents in substance. For in the new composite such accidents receive a fresh actuation, or existence and therefore though specifically the same they are numerically different.[78] Each particular accident is a real being. Although accidents and substances form only one existence, each accident is distinct from the others and from the substance. Strictly speaking, an accident is not a being so much

[73] Harper, *op. cit.*, pp. 189-195. D. Nys, *Cosmologie* (Paris, 1906), pp. 354-362; 372-379.

[74] Mercier, *op. cit.*, p. 26.

[75] *Ibid.*, pp. 264-274.

[76] *Ibid.*, p. 294.

[77] Mercier, *op. cit.*, pp. 297-298. Harper, *op. cit.*, p. 381.

[78] *Ibid.*, p. 371.

as it is a being of a being—*ens entis.* Consequently, in speaking of one of the qualities of a tree, we say: "This tree is green" and not "This tree has greenness." From this it follows that being is not predicated univocally of substance and accident. An accident can be defined only by including its subject of inhesion. Inasmuch as it has a definition, it can truly be said to have an essence.[79]

The accident of quality, considered as a distinct category, denotes an accidental determination that formally modifies substance by increasing or diminishing its natural perfection and allows us to say of what kind it is.[80] Sensible qualities are those determinations of substance which produce in their subject some corporeal change. From the standpoint of the percipient these qualities are called both proper sensibles and secondary qualities if perceived by one sense; if perceived by more than one sense they are known both as common sensibles and primary qualities. Philosophers of the School accept the Aristotelico-Thomistic enumeration of these qualities, that is, color, sound, savor, odor, and tactual qualities in the first class, and extension, figure, motion, rest, and number, in the second class.[81] Now the fact that a descriptive definition of these sensible qualities usually includes a percipient subject has raised the question as to whether or not, the sensible qualities can or do exist without a percipient. In other words, do the traditional Scholastic philosophers corroborate the common man when he locates these colors, sounds, etc., in external and extraorganic objects? Doctor Coffey very clearly gives the Scholastic answer to this question:

[79] *Ibid.*, p. 688. Mercier, *op. cit.*, p. 302. Coffey, *Ontology* (London, 1926).

[80] A. D. Sertillanges, *S. Thomas D'Aquin* (Paris, 1925), Vol. II, pp. 232-233; p. 75. J. Rickaby, *The First Principles of Knowledge* (New York, 1889), p. 263. Mercier, *op. cit.*, pp. 312, 322.

[81] M. Maher, *Psychology* (London, 1921), p. 153. Mercier, *Psychologie* (Paris: 1908), Vol. 11, pp. 148-158; *Ontologie*, p. 331.

All the sense qualities alike are extramental, . . . are real characteristics of a domain of reality which exists independently of the perceiver's mind, . . . Of this domain he becomes aware by becoming aware of the sense qualities. If these are not really in it and do not really characterize it, how can he be certain even of its extramental existence? And if they are not extramentally real how can they be in an extramental reality or characterize it or reveal it to him? But when they appear to him in actual perception as affecting the external or extra-organic or non-self domain of reality, can he be sure that they are really in this domain notwithstanding the fact that for the specific determinations with which they are presented to his consciousness they are *practically* dependent on the subjective or self factor which is his own organism? The answer is that he can, provided that this organic, subjective or self factor is normal: and this he can determine with certitude by experience.[82]

Scholastics down to our own day, following St. Thomas, hold that real, sensible qualities are in the bodies which constitute the external, material universe.[83] They are present in these bodies as real, accidental, determinations of them, existing independently of the milieu (with the exception of sound),[84] and independently of a perceiving subject. As such they are actual qualities known as passive affections, that is, qualities which have been received in a bodily substance. Viewed merely as passive affections, these qualities are incapable of causal action.[85] It is therefore the traditional Scholastic doctrine that the sensible qualities, as passive affections, are actual qualities having a real existence in the extramental, extraorganic, external bodies of the universe.[86]

Nevertheless, the sensible qualities are not limited to the

[82] P. Coffey, *Epistemology* (London, 1917), Vol. II, p. 104.

[83] Maher, *op. cit.*, p. 153.

[84] St. Thomas held that sound was a successive quality residing in the medium and most of the Schoolmen endorsed this view. J. O'Neill, *Cosmology* (London, 1923), Vol. I, p. 294. Cf. St. Thomas, *De Anima*, II, 16, 17, 18.

[85] Harper, *op. cit.*, Vol. III, pp. 203-204.

[86] O'Neill, *op. cit.*, Vol. I, p. 217.

status of passive affections; they are also active affections, that is, physical powers, or qualities capable of affecting others. Thus, the afore-mentioned qualities, as capable of producing an impression on one or other of the senses, are active affections.[87] The location of their qualitative essence under this aspect involves the process of perception and is based upon the pivotal Scholastic teaching on potentiality and actuality.[88] Under this aspect the sensibles are truly said to be in the external object, but only in a state of potentiality. In order to actualize a sensible quality, a medium and a percipient subject are also necessary. Albert Farges has clearly understood this and has shown how a body can be in three different states, relative to one of its qualities.[89]

(a) S'il est dans les ténèbres, il ne sera ni coloré ni visible en acte, mais seulement *visible en puissance.*

(b) S'il est éclairé, il sera coloré et *visible en acte,* et ne sera qu'*en puissance d'être vu.*

(c) Enfin, si je le regarde, il sera *vu actuellement.* Le dernier de ces états, bien loin de produire le second, le présuppose logiquement et chronologiquement.

Thus a perception, according to the Scholastic teaching, requires three factors, namely, the sensible quality, the medium,[90] and the sense organ of the percipient subject. Perception is a complex process by means of which the percipient is affected by an external object in such a way that his sense organs acquire

[87] Harper, *loc. cit.*, pp. 203-204.

[88] Mais auparavant nous devons noter une division de l'être qui est présupposée aux predicaments et qui les concerne tous; division telle-capitale que sans elle nulle réalité ne saurait evoluer, ni nulle pensée construire le monde. Sertillanges, *op. cit.*, Vol. I, p. 76.

[89] A. Farges, *L'Objectivité de la Perception des Sens Externes* (Paris, 1891).

[90] The Scholastics do not hold that the medium is essential to the (P. 185) act of perception; but they commonly explain the perceptive process by means of a medium. Only the percipient subject and the object are absolutely necessary for perception. Cf. Mercier, *Psychologie,* pp. 218-219.

for a time, as far as the nature of the percipient admits, the quality which exists in the external object. This quality existing in the sense organ is called the intentional species or sensible species.[91] The sensible species is an imitation or reproduction of the external qualities of objects.[92] The object of the senses is what presents itself to them. It is not the thing, such as it is in itself, but such as it presents itself to the sense, by means of a change produced in it.[93] The sensible quality affects the medium which in turn affects the sense organ, so producing the sensible species.[94] The reaction of the percipient to this impressed species is the sensation, for a sensation is a change in the soul through the body. Now what the percipient perceives is not the species but the external sensible quality. The species sensibilis is not the *id quod percipitur*, but the *id quo aliquid percipitur*. Farges succinctly expresses the Scholastic teaching on this.[95]

La passion du sujet, la species impressa n'est nullement ici la chose perçue (*objectum quod*) : elle n'est pas meme une photographie ni une image intermediaire (*objectum in quo*), comme on le suppose parfois trés faussement; elle n'est qu'un moyen (*id quo*), le moyen necessaire pour réunir immediatement dans un sel acte l'agent et le patient, l'objet materiel et le sujet sensible, et rendre ainsi possible la perception immediate.

The reason for speaking of the sensible form as in one way an actuality of the sensible quality is the Scholastic teaching

[91] *Ibid.*, Vol. I, p. 158. Nys, *op. cit.*, pp. 341-342. O'Neill, *op. cit.*, Vol. I, p. 207.

[92] Mercier, *loc. cit.*, pp. 137, 166.

[93] L'object du sens est ce qui se présente a lui. Ce n'est donc pas la chose telle qu'elle est en elle-même, mais telle qu'elle se rend présente à la puissance sensitive, moyennant un changement qu'elle produit en celle-ci. Mercier, *loc. cit.*, p. 149.

[94] Though contrary to the too general idea, this species is not taken in by the sense, in a material form—if they were, sense would become the sensible itself, the eye color, or the ear sound. E. Gilson, *The Philosophy of St. Thomas Aquinas*, trans. by E. Bullough (St. Louis, 1929), p. 226.

[95] Farges, *op. cit.*, p. 28.

that, whatever be the purpose for which any reality exists, it is, when realised, an actuality of that reality. "The proper sensible exists in order to be perceived; it cannot be perceived except it imprints on the external sense a copy of itself; hence this impressed form (*species impressa*) may be called in a true sense, its actuality." [96] Besides it is a fundamental principle of Scholastic metaphysics that the passion is similar to the action. It can even be said that the action and the passion are phases of the same act, in which one gives and the other receives.[97] Since what is perceived exists in the external body as a quality, it is that particular quality that we perceive.[98] Scholastics are following the dictates of good sense when they say that the reason a quality appears as green, or soft, or sweet is because it is such.

It is in this manner that traditional Scholastics may be said to locate qualitative essence in the sense organ of the percipient subject. In doing so they are following Aristotle and St. Thomas in assigning to the sensible qualities a double actuality and consequently a double location; the first in the external material object and the second in the sense organ of the percipient subject.

(*To be concluded.*)

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[96] O'Neill, *op. cit.*, Vol. I, p. 216.

[97] Sensus in actu est sensibile in actu; quia ex utroque fit unum sicut ex actu et potentia. S. Thomas, I, q. 55, a. 1, ad 2. Nam omnis forma est principium agendi simile sibi. S. Thomas, *De Anima*, II, 14.

[98] L. J. Walker, *Theories of Knowledge* (London, 1911), pp. 40-42.

BOOK REVIEWS

Polarity, A German Catholic's Interpretation of Religion. By ERICH PRZYWARA. Translated from the German by A. C. Bouquet. London: Oxford University Press, 1935. Pp. xii + 150.

This work contains a synopsis of a general philosophy of religion based on modern dialectic schemes of thought. It appeared originally as a contribution to the great *Handbook of Philosophy*, published a few years past in Munich, to which Driesch, Weyl, Rothacker, Wolff and others also contributed. Father Erich Przywara of Munich was chosen to present the Catholic philosophy of religion. Well known for his writings on theological and philosophical problems, Father Przywara is by many considered to be the most important philosophical theologian in contemporary Germany and the leading exponent of the Catholic position.

Throughout the book Father Przywara seems to be conscious of the Neo-Protestant movement in Germany of which Karl Barth is the leader. The latter has said that the doctrine of *Analogia entis* is the invention of Anti-Christ. We may assume that this essay is meant to be a defense against this attack. Dr. Bouquet, the translator, tells us in his introduction that although *Polarity* is not the original title of the essay, it seems to sum up the message of the author with its repeated emphasis on "the opposing but complementary poles of thought, upon tensions, rhythms, oscillations, explosions and balanced unities."

Fr. Przywara sets before himself two tasks. The first, indicated by the phrase, "religion of philosophy," consists in demonstrating the metaphysical foundations for belief in God through the exposition of a general synthetic philosophy. His second, indicated by the phrase, "philosophy of religion," is to display the final structure containing the Catholic system of cultus, morals, and dogma. He asks the question: "What is common ground for both philosophy and theology? or, What is the fundamental presupposition regarding subject and object and their correlation, which brings together both philosophy and theology and unites them as organically one?" He begins with the general consideration of the problem of our relation to God; indicates its solution as found in the fundamental thesis upon which the Catholic religion is based. He concludes with a survey of the historical implications of this thesis.

Father Przywara takes as his point of departure the consideration of human consciousness which, he says, oscillates between experiences of Immanence and an experience of Transcendence; and, further, between an experience of an inward concept of an ego and an experience of an individual concrete ego which feels itself in the double tension of mind-body and individual-community. Religion, therefore, is considered as regarded (a) from the standpoint of the consciousness of the ego and (b) from the standpoint of the consciousness of the concrete ego.

There are three fundamental modes in which the ego experiences and relates itself to the "Infinite Unity of Completeness" of which it is aware. The first is Immanence (self-containedness, Pantheism) in which God is openly the "Unity of opposites." The second, Transcendence (stretching-beyond-self) is largely deistic. Through these two vertically opposed activities, there cuts a third, which recognizes no given Unity of Completeness but only a Unity which never *is* i. e., not an Infinity of *being*, but of *endeavor*. This mode is called "becoming-actualness," or Transcendentality. Each of these modes is, in reality, combined with the other two, so that each has a threefold division according as we think of them as "pure" or commingled with each other. Thus we have nine "sub-types" of experience which correspond to different theories of religious philosophy.

Regarding the relation of the soul to the Deity, Type A (Immanence) considers this as a relation of desiring to be One and to know oneself in Unity. Type B (Transcendence) considers this as an attitude of separation and consequent aloofness. Type C (Transcendentality) aims to unite the attitudes contained in the first two and hold them in tension. This effort is without success, for the result is an "explosive unity," i. e., a tension so forced that the contradictory elements fly apart and render a union impossible.

"Is religion an Act of God or an act of man?" If the former, we have Absolute Supernaturalism; if the latter, Absolute Rationalism. Since both answers fail to satisfy, and it is impossible to unite them, the question arises: Is religion impossible? Is man unable to synthesize his modes of experience?

In the second part of the book, the author gives the answer to this question and presents the fundamental basis of the Catholic theory of religion. This, strangely enough, has its standpoint at the same time outside the tangle of problems described in Part I and yet in its very midst, reducing the whole tangle to a unity. It is the familiar Thomistic

doctrine of *Analogia entis* which was given its authoritative expression in the decree of the Fourth Lateran Council: *Inter Creatorem et creaturam non potest tanta similitudo notari quin inter eos maior sit dissimilitudo notanda.* It is the doctrine of creation, a *via media* between Pantheism and Dualism, in which the creature and the Deity are shown in a tension which is not "explosive" but merely "open upwards." God is above comprehension, and so is known only by analogy. The metaphysical comprehension of God is neither that of identity (rationalism) nor that of a dualism (irrationalism) nor of congruency (separate but aiming at the same thing). It is a tension-in-unity of "loving reverence and reverent love." Hence the only question that remains: "Is the relation between the Absolute and the Relative of the subject of consciousness, the relationship of Identity and Contradiction or the relationship of analogy?" The ultimate cause of the failure of the three theories which proceed from the three main activities lies in the fact that they make Deity ultimately a function of consciousness. God is not for them the Absolute, but merely "an Absolutized Relative." But for the doctrine of *Analogia entis* the essentially absolute fixed point outside the creature is found within the Deity. The God of Catholicism alone, therefore, is the truly transcendent Deity.

The principle of *Analogia entis* preserves the three fundamental modes of experience and furnishes them with a real and lasting synthesis. It shows religion to be a possible and real relationship between the Deity and the creature, and provides a basis for the solution of the difficulties connected with free will and grace, and nature and supernature.

In the final section of his book, Father Przywara shows from history how the principle of "tension-in-unity" has worked out in theology. He distinguishes six divisions of this development: (1) of the Old and the New Testaments; (2) of the Greek Fathers; (3) Augustine; (4) Thomism and Scotism; (5) Molina-Suarez; (6) Newman. These types are ultimately reducible to Augustinianism and Thomism, which are themselves in tension with one another. They are also in tension because of the complementary and antithetical elements within themselves. However, all of these various elements combine into a unity by the law of *Analogia entis.* Their co-existence within Christianity indicates an oscillation between Naturalism and Spiritualism, between Individualism and Universalism, between the Eastern and

Western minds, between the concept that "God is All" and that "the creature is real."

These are only a few illustrations of the many-sided thought of this book. That such richness and variety of thought should be compressed into so few pages is a remarkable achievement. By his masterful synthesis Father Przywara has shed new light on the *philosophia perennis* and has made a valuable contribution to religious philosophy. Due to the depth and compactness of its thought and to the technical character of its style, the book is by no means easy reading. But for the student of the philosophy of religion a study of *Polarity* will prove more than rewarding the effort it requires.

Dr. Bouquet, the translator, is an Anglican lecturer on the philosophy of religion at Cambridge University. He deserves our gratitude for making available to English readers a new and important treatise on the philosophy of religion from the Catholic viewpoint. He is to be congratulated on his success as a translator in an undertaking which, because of the nature of both thought and expression in the original text, must have been no easy task.

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La Philosophie de la Nature: essai critique sur ses frontiers et son objet. By JACQUES MARITAIN. Paris: P. Téqui, 1935. Pp. v + 146.

This brief but superb study is a work of demarcation and delimitation and may be regarded as a sort of "prolegomenon to any future cosmology." Maritain is well aware that the intellectual life on this planet did not become defunct in 1274. For the philosophy of nature he thinks we ought to recognize a law of senescence and rejuvenation, a certain rhythm or periodicity, because unlike metaphysics, it is considerably affected by and dependent on time. The longevity of a philosophy of nature is intermediate between that of ephemeral treatises on experimental science and works on metaphysics which may defy time, and should endure with periodic revisions probably no longer than a human lifetime. He welcomes today's renaissance in this field and regards modern science as more congenial than ancient or mediaeval science to Aristotelico-Thomistic cosmology. The death of Cartesian, Newtonian and Victorian dogmas enhances such a liaison.

The scope of the philosophy of nature is expounded by the author within the framework of the three generic types of abstraction made familiar to readers of *Les Degrés du Savoir*. These classical divisions of speculative knowledge or orders of typological visualization are, of course, PHYSICS (including both the sciences and the philosophy of nature), MATHEMATICS and METAPHYSICS. The first degree of abstractive or ideative visualization is physics which deals with the sensible; the second degree is mathematics and treats of the imaginable; and the third degree is metaphysics which is concerned with the purely intelligible. In dealing with a material object physics abstracts from its singularity, mathematics from its sensibility and metaphysics from its materiality.

These three speculative sciences are distinguished from one another as different modes of what Cajetan calls formal abstraction, that is, of intensive or typological visualization. Our moderns would seem to be aware of extensive visualization or total abstraction only. This latter is, by comparison, superficial, grasping, as it does, only empirical averages and the potentially intelligible.

Within the first order of abstractive visualization, or physics (in the broad traditional sense), there are two kinds of analysis of sensible reality, two manners of constructing concepts or modes of definition. Empiriological analysis or descending resolution which proceeds from observable to observable is the method of the sciences of nature. Ontological analysis or ascending resolution which proceeds from the visible to the invisible is the method of the philosophy of nature. Empirical analysis and explanation, of course, is always concerned with grasping reality and always, inevitably, refers to being (because, despite nominalists, the intelligence is always by its very nature impelled toward being), but its object is not intelligibility. Empirical analysis deals with sensible being as observable and metrical. But there is always a basis in reality for its myths, symbols, substitutes, constructs and spatio-temporal representations. Even essence, substance and cause are reached blindly and obliquely. Primitively philosophical notions become phenomenalized.

The philosophy of nature must avoid the two extremes of being absorbed by the sciences of nature or of being eclipsed by metaphysics. With the ancients and through the Middle Ages right up to Descartes, the philosophy of nature or ontological analysis absorbs the sciences of nature while with the moderns it is just the other way around. It is a mistake to apply philosophic criteria to scientific facts and the phi-

losophy of nature should deal with philosophic facts. However, scientific facts and even the prescientific, primordial facts of ordinary observation or infra-scientific experience become philosophic in character or acquire an ontological value when they have been critically interpreted and examined in the light of philosophic principles. The distinction between fact and theory is important but because a subjective factor is often involved and sometimes deceives us is no reason for assuming that such deception is invariable.

Another mistake is made by those who, confusing the philosophy of nature with metaphysics, think that the former can ignore or reject scientific facts. There is or ought to be a complementarity, reciprocity and interdependence between the philosophy and the sciences of nature. Moreover, the former has as its natural place the base of the organic structure of human philosophy and it cannot be neglected without jeopardizing metaphysics which presupposes it as its point of departure and means of contact with real things. Suppress the philosophy of nature and you have no speculative, merely a reflective, metaphysics left and that metaphysic will be puerile and sterile.

In the pure or orthodox positivism of Comte there is no philosophy of nature for the very good reason that there is no philosophy. This science of phenomena and their relations is so "pure" that it is sterilized and void of all reality. While Duhem is opposed to the elimination of the philosophy of nature even while strongly advocating the positivistic conception of science, Meyerson on the other hand rejects the positivistic view of science but favors its repudiation of a philosophy of nature. Duhem reduces science to a search for mathematical laws, not causes, while Meyerson insists that science cannot escape the question "why?" or the need of explanation and cannot be reduced to simple description or to answering the question "how?" The reader will here recall, Mach, Pearson, Hobson and J. A. Thomson.

German phenomenology, according to Maritain, escapes from mechanism and positivism but is in danger of making science into a philosophy of nature. Its metaphorical explanations may not hurt science which is checked against experiment but they may do damage to philosophy.

Maritain borrows from St. Thomas, Cajetan and John of St. Thomas with profit. The old distinction between *objectum formale quod* and *objectum formale quo* proves quite serviceable in contrasting the spheres and viewpoints of the empirioschematic and the empiriometric sciences of nature with that of the philosophy of nature. Between the philosophy of nature and the empirioschematic sciences of nature there

is a difference as to *ratio formalis sub qua* or "objective light"; between the philosophy of nature and the empiriometric sciences of nature, i. e., the physico-mathematical branches of natural science, there is also a difference as to *ratio formalis quae* or "intelligible appeal." It is a modern error to equate the more mathematical branches of science with a philosophy of nature. Confusion arises from failure to recognize the intermediate status of sciences that are formally mathematical but materially physical. When physical science is dominated by the usurper mathematics, as it recently seems to have been, we are confronted with a different generic type of abstraction, a different degree of typological or intensive visualization.

DANIEL C. O'GRADY.

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Three Interpretations of the Universe. By JOHN ELOF BOODIN. New York: The Macmillan Company, 1934. Pp. 519.

God: A Cosmic Philosophy of Religion. By JOHN ELOF BOODIN. New York: The Macmillan Company, 1934. Pp. 240.

The author, professor of philosophy in the University of California at Los Angeles, gives in his Foreword to *Three Interpretations* (pp. 6-7) a sketch of his development in philosophy: "He started with radical empiricism and temporal realism as a protest against the static conception of reality as maintained at the end of the nineteenth century by both the mechanists and the absolute idealists. His early philosophy emphasized absolute flux and temporal novelty. In the terminology, which has recently become fashionable, it was a philosophy of emergence. This was expressed in his doctor's thesis, *A Theory of Time*, 1899 (unpublished), and in his monograph, *Time and Reality*, 1904 ("Psychological Review Monograph Series"). But he was obliged on further thought to recognize the pragmatic reality of the world of ideal values, and this recognition found expression in various essays culminating in the last chapter of *Truth and Reality*, 1911. His further analysis convinced him of the reality of form or structure in the kaleidoscopic world in space and time, and this point of view was set forth in *A Realistic Universe*, 1916 (revised edition, 1931). This recognition led, in *Cosmic Evolution*, 1925, to the cosmological hypothesis of a spiritual control which gives measure and order to the process of nature. This cosmology has, in the volume, *God*, developed into a theology—effort

to show the significance of God in the Universe." This volume and its companion, *Three Interpretations of the Universe*, appear under the general title, God and Creation. The latter, being more technical, is more particularly addressed to students of philosophy, and the former, more poetic, to all who have an imaginative and religious interest in the life of man in the universe, for the author holds that "philosophic scholarship is barren unless it leads to poetic interpretation."

Three types of interpretation of the historical process by which the present order of nature has been established are distinguished: Preformation, or "the notion that evolutionary development is latent in the process so that the later forms and stages are really an unfolding or making explicit what is already present in the earlier stages of the same history"; Emergence, which means "the appearance of new characteristics and structures in the process with no apparent guidance from within or from without"; Creation, or "the occurrence of new forms, characters and stages under the guidance of an actuality which controls and animates the course of history." To the discussion of these types the author devotes the three parts of his more technical volume. He traces the impulse to the preformist view in Western thought to Plato and Aristotle who emphasized the pre-eminence of form over matter, though neither can be regarded as a strict preformationist for both recognize processes with emergent qualities as well as a guiding form. The classical Stoics were perhaps the most thorough-going preformationists, and they were rather dualists than monists and pantheists. In the eyes of Professor Boodin, Stoicism had its effects on the Catholic theory of creation, as it appears from St. Augustine and Erigena, the latter coming nearest, among Catholic theologians, to being a strict preformationist. Though condemned by the Church, Erigena set the standard for the systematic construction of the Middle Ages, his real successors being Eckart, Cusanus, Bruno and Boehme, and in our own day A. N. Whitehead. In modern thought the upholders of preformation whose position is analyzed by the author have been Leibnitz and the German idealists, Kant, Schelling, Hegel, Schopenhauer and von Hartmann, and in America, "the most daring and thorough-going attempt to interpret evolution from the point of view of preformation is that of the cosmic poet par excellence, Walt Whitman." The main fault which the author finds with the doctrine is its failure to take time seriously. "It has done its business with a spatialized time, and has eliminated real time with its novelty and contingency."

Four chapters are devoted to the discussion of materialistic emer-

gence. Its beginnings are traced to the Greek atomists, Leucippus and Democritus, but Lucretius is its outstanding historical representative. According to Plotinus, the later Stoics developed a theory of strict emergence, i. e., the "birth" of the higher from the lower by "chance," i. e., without any guidance. In the nineteenth century, the transition from pantheism to materialism is strikingly illustrated by Ludwig Feuerbach, whose momentous book, *The Essence of Christianity*, became the inspiration of materialistic socialism, led by Karl Marx and Frederick Engels, the official philosophy of Soviet Russia, where it is still called "dialectical materialism." The author considers the mechanical hypothesis upon which it is built as "a dead hypothesis," and passes on to the consideration of the latest formulations of the emergence theory, the strict emergence of Broad and Lovejoy, and the "hybrid" emergence of Herbert Spencer, Samuel Alexander and C. Lloyd Morgan. To the credit of the theory he finds that it "has called attention to novelty in nature," but he is inclined to view it rather as a statement of fact than as a principle of explanation. Then, having examined emergence historically, he tries to find what it means in the science of today: in physics, in biology and in the psychological sciences. From his survey of the new concepts of matter, of energy, of causality, he concludes that emergence has become increasingly recognized as characteristic of nature, but it is not mere chance emergence without any control in nature, and the physicist is becoming deeply involved in metaphysics. Biology has developed the most thoroughgoing mechanistic hypothesis in modern times, but from a review of the facts of life, adaptation, heredity and evolution, Prof. Boodin judges that this hypothesis, of which the vitalism of Driesch is but a form, furnishes no mechanism of development. He sees only one possible way in which the organism of factors, which cannot be taken as a mere collection, can function as a whole. There must emerge in the synthesis of the individual a new entity, a formative pattern, a soul, to use Aristotle's language. Likewise he feels obliged to regard evolution not as a haphazard heaping up of elements but as the expression of what he calls "cosmic genius" in the milieu of nature. In the psychological sciences he notes evidences of revolt against the traditional mechanistic interpretation of psychic life as it was found in Hume's associationism or Mill's "mental chemistry," in psychophysical parallelism, and Behaviorism. Gestalt Psychology is the most striking form of this revolt. It covers all psychological phenomena, laying emphasis on their wholeness or unity, but the author complains

of its vagueness and of the stress it lays on the physiological explanation of behavior. For him the psychological level is an emergent which cannot be explained in terms of physiological processes and he suggests going back to "Aristotle's conception of the soul as a whole-form or whole-control," whose action is directive.

The last chapters of the book deal with the theory of creation which recognizes both novelty or emergence and formal guidance and formative agency in nature. For it the world is not just the result of chance, but is shaped in its course by an intelligent "genius." It is in this part of his work that the author, whom we could view as an ally in his discussion of preformation and of emergence, comes into conflict with the Christian conception of God's relation to the universe. He rejects the doctrine of creation *ex nihilo*, and if he calls God the creative genius of the cosmos, it is only in the sense that an intelligence was required to put order and beauty in a chaos which is coeternal with God. He traces his doctrine to Plato whose cosmology, he says, "reaches its height in the *Timaeus* where he shows that the real root of failure (i. e., of evil in the world) lies in an inherent indifference or laziness on the part of the world in which God works to create order and beauty." (p. 323) He points to a lacuna in Aristotle's thought: "What Aristotle needed was a creative mind in the universe, but Aristotle's God does not create. Here Plato had the advantage." (p. 375) "Aristotle's God is being, but not in the sense of the source of existence, but in the sense of the ultimate meaning and perfection. Aristotle's God is the acme of the universe, but not its base." (p. 360) Hence Aristotle is like Plato a pluralist. The prime matter out of which everything emerges is coeternal to God, and, being an independent fact and furnishing inertia to ideal realization, is the source of evil. (p. 347) In Plotinus' doctrine of emanation the author finds a form of extreme creationism, which conceives all reality, with its diversity and grades emerging from the absolutely simple. However Plotinus is not a monist; with Plato and Aristotle he recognizes the existence of primitive matter. "The struggle of form with matter is responsible for the failure in the world process. It brings about the deformity, the ugliness, in short the evil that we find. . . . What the world 'receives from divinity are goods; its evils derive from primordial nature.'" In his analysis of the doctrine of creation in the Hebrew and Christian tradition, the author contrasts what he calls the dualistic conception of creation which he ascribes to the Prophets and early Christians who believed that "in the beginning there were God and

chaos, and the spirit of God ordered chaos," with the "monistic" conception of creation out of nothing which "won its fateful triumph" in the third century. The theologians whom he holds responsible for establishing this conception as a doctrine of the Church were Origen and St. Augustine. The former was unable to conceive how anything could exist that did not trace its origin to God, the latter, influenced by the spirit of Rome, which was power, substituted the attributes of omnipotence and omniscience for the feeling for righteousness and beauty which had dominated the Hebrew and the Greek conception. God is set above time and space, and while St. Thomas tried to humanize the theology of St. Augustine regarding free will and predestination, he retained that monistic conception of creation which, among other difficulties, makes the problem of evil inscrutable and robs man of initiative and responsibility. The Catholic reader will know what to think of the value of this historical account of the origin of the doctrine of creation *ex nihilo* and whether it may be looked upon as "an *apriori* excrescence" of which the Scholastic tradition ought to be rid. (God, p. 145)

The greater part of the second volume, which is made up of articles written for the *Hibbert Journal* and other reviews and of essays read before philosophical associations, deals with the same problems that have been discussed in the first volume. The last two chapters: "The Cosmic Tragedy," and "The Divine Laughter. A Religion of Joy," attempt a middle course between optimism and pessimism which is in the logic of the author's conception of a finite God struggling to put order and beauty in "lazy" matter. "The dogma that the world is a perfectly ordered whole in which every part ministers perfectly to every other, the lower to the higher and everything to the whole, is a fiction without foundation in fact." (p. 178) But above the life of Nature which is "a tragic life without hope," there is a life of the spirit, a life of communion with the eternal spirit of creation, which discovers harmony and joy even in suffering. This would lead us to think that the author is ready to appreciate the Christian ideal, but we find him bitterly denouncing St. Paul falling back upon the primitive tribal idea of guilt and succeeding in reinterpreting Christianity, which had appeared as a religion of joy, into a religion of sin and expiation. How shallow is his moral code will appear from his last precepts to man: "Let man do his work with laughter and singing"; "Cease to make virtues out of negations and make virtues out of helpfulness and

mirth. Gravity is as dangerous as frivolity"; "Hail to the creators, hail to the thyrsus bearers, for they are the sons of God."

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New Pathways in Science. By Sir Arthur Eddington. New York: The Macmillan Company, 1935. Pp. xii + 333.

This volume is the first book of any size produced by Eddington since the appearance of his *Science and the Unseen World* in 1929. It is mainly a recast of the Messenger Lectures which he delivered at Cornell University in April and May, 1934. It does not contain any new or startling theory but is rather a thorough résumé, in a popular vein, of the outstanding theories and advancements in microcosmic as well as macrocosmic physics. In this attempt to present these theories in a form understandable to the lay mind, the author purposely sacrifices exactness of terminology and formulae and invariably uses examples from daily experience to illustrate a point. His achievement is not, therefore, of extremely great significance either to the scientific or to the philosophic realm as such; its chief value, I believe, consists in extending a knowledge of the tendencies of physical science and its vast strides towards an understanding of the external world to those not trained in the intricacies of higher mathematics.

The opening chapter is a somewhat diffuse and very obscure exposé of the philosophical implications of present-day science. From this the author passes over to a summary of the theories of atomic physics. The third chapter presents a theory concerning the end of the world which, Eddington states, will be nothing more or less than that the universe will have reached the state of thermodynamic equilibrium.

Subscribing as he did and does to Heisenberg's Principle of Uncertainty or Indeterminacy, Eddington builds up a quasi-historical exposition of the decline of determinism in his fourth chapter and follows that immediately by an explanation of the theory which displaced it, including a description of the Quantum theory. The acceptance of indeterminacy, according to Eddington, does not entail the denial of causality in the world of experience, but only in the atomic or subatomic universe. It is difficult to understand how the author can overlook the almost obvious implications of the principle of causality in the theory of indeterminacy itself.

After a chapter on probability as it is understood in the methodology of Physics, there follow expositions of the constitution of stars, subatomic energy, the constants of nature and the theory of groups. Of the two final chapters one is devoted to the answering of various objections to and attacks upon his previous works and theories. In a forceful and convincing manner he answers the criticisms of Stace and Joad, Samuel and Russell, all of whom attacked from a philosophical viewpoint; the last mentioned took exception likewise to Eddington's religious views based on science. He speaks as one open to argument and conviction but determined not to be misunderstood or misinterpreted. For the most part he cites in his own defence the very men used by his critics as authorities against him. In the final chapter, the epilogue, Eddington makes clear his views on the relation of physics both to religion and to philosophy. He definitely designates the outer boundaries of physical science, claiming nothing for it beyond an attempt to explain the constitution of the universe on the grounds of experiment and observation. "Physics must be undogmatic," he writes; ". . . there is scarcely any physical conclusion which we can hold as safe from all possibility of revision . . . the type of knowledge after which physics is striving is much too narrow and specialized to constitute a complete understanding of the environment of the human spirit. . . . Physics has become more sure of its aims—and perhaps less sure of its achievements. . . . I have no philosophical axe to grind." And so the present work steers clear of any philosophical building upon the discoveries of theories of physics.

As a means of orientating an individual in the field of present-day physics without demanding a great deal of technical training or terminology, this book, written as it is with authoritative understanding of the subject-matter, and in a conservatively popular style, can hardly be excelled.

HENRY A. LUCKS.

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MAURICE DE WULF, *History of Mediaeval Philosophy.* Volume I: *From the Beginnings to the End of the Twelfth Century.* Translated by ERNEST C. MESSENGER. (Louvain.) London: Longmans, Green and Co., 1935. Pp. xiv + 317.

This third English edition of De Wulf's famous work is based on the sixth French edition (1934). The new edition is indispensable to

anyone interested in the history of philosophy. Studies in this field have progressed so rapidly that the fifth edition (1924) is no longer adequate. Besides, in this revision M. De Wulf has modified his former method of presentation, which was criticized as being, to some extent, a premature philosophy of history. He now begins with a series of soberly historical monographs and only at the end of the volume introduces the comparative method in a brief series of synthetic studies.

The translator has discharged his task rather well for the most part. There are occasional lapses, e. g., the sentence next to the last on page 119 apparently skips a line of the original. On page 261, "We must note the chief antinomies in presence" transliterates but does not translate the French: *"Il importe de relever les principales antinomies en présence."* On page 253 there is a similar transliteration of the French *en fonction.*

If translations are necessary English translations of other works should be noted in the bibliography when they are available, e. g., Langlois and Seignobos, *Introduction to the Study of History* (p. 29) and F. Lot, *The End of the Ancient World and the Beginnings of the Middle Ages.*

The proofreading is very faulty, especially in the bibliography. Names are frequently altered: read Klingner for Klinger on p. 113; Dudden for Duncan on p. 120; Brehaut for Brehant on p. 121. The name of the Russian scholar Boubnow is misspelled in two different ways on page 152. The orthography in German words is careless; the dots for the umlaut are very often omitted. The errors are almost never found in the French original. It is to be hoped that these blemishes will be removed from the succeeding volumes of the translation.

A. K. Ziegler.

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Philosophy and the Concepts of Modern Science. By Oliver L. Reiser. New York: The Macmillan Company, 1936. Pp. xviii + 323.

"Considering the fact that man consists of about four buckets of water and some minerals, hasn't the human race done pretty well?" (p. 292) That quotation has a double purpose: it indicates the author's idea of the nature of man and serves as a fair commentary on his book. The author proposes as a philosopher to integrate the vast and unwieldy

mass of facts discovered by the physical sciences into a meaningful whole. There is no denying that some such integration, some systematization, evaluation and concise restatement of all the late scientific discovery in the light of philosophy is a consummation devoutly to be hoped for. To be of any permanent value, however, it must be done in the interests of objective truth and by sincere, open-minded scholars. This volume fails on both counts. In the first place, the author approaches the problem with a bias. He is, self-confessedly, or better, self-admittedly (p. 126) a naturalist in the sense that he denies the existence of any and all phenomena or events which do not fall within the domain of nature. "If, for example, 'God,' or the 'soul' are realities, they are inseparably bound up with the physical universe, in the same way perhaps, that musical harmony and logical structure are dependent upon a physical basis." It is plain that his integration of the facts of scientific discovery will be colored, regulated, inspired by what he calls "humanism." Nor, in the second place, does he give indication of sincere love of truth. It has become passé to refer to the Middle Ages as a detour on the road of cultural progress; it is laughable to list the reformation of the sixteenth century among the important movements that furthered the development of the modern scientific world; the placing of Francis Bacon upon a pedestal might be pardoned in an Englishman as hero-worship, but hardly expected and much less deserved from any other source. The author might have benefited much more by reflecting on the idols of Lord Verulam: one in particular cautions against the innate tendency to anthropomorphize. But these may be meaningless minutiae.

The object of the volume, in brief, is to show the results of a humanistic interpretation of the new physics in the world of reality; to present a system of ethics based on the humanistic interpretation of history and religion.

Among the dizzying number of implications in this philosophy of science are some of an epistemological nature. Mind is, of course, a product of evolution, a spatio-temporal unity! Consciousness is but another dimension. The complete set of difficulties of all monistic theories of knowledge (of which the author is either blissfully ignorant or about which he is defiantly subtle when he says that an epistemological monism is a desideratum of philosophy) are his to explain—when he gets around to it. The nexus between matter and consciousness is light. Appropriately then, is thought a ray? Thoughts of revolution can be red rays; thoughts of trouble, blue; thoughts of philosophy, golden, especially when in book-form!

What happens when the new physics runs counter to an axiom? The axiom gives way. For example: because of the theory that an electron is both a particle and an undulation, the axiom: a thing is what it is, must be revised. It is allowed to stand as an axiom of logic, but all validity in the world of reality is denied to it. But axioms are of the number of nasty little stubborn facts. Mere theories are not sufficient evidence to use as basis for denying the validity of the principle of identity in the ontological order. What is there about physics that makes its methods, its findings, its theory-mouthings omnipotent and sacrosanct? They are not so in fact. Today the much revered and awe-inspiring theory of relativity is being challenged; the next breeze from the west may waft another theory. Philosophy cannot take over bodily the content and method of physical science; if it is to act as integrator it must be autonomous at least in the sense that it is limited neither in method nor in scope by any other natural science, though it is dependent to some extent upon the other sciences for content and method.

Humanism applied by Reiser to the social sciences and finally integrated into a religion and a code of ethics presents nothing novel or startling. Creative evolution with a moral aim has been broached before. But Reiser has discovered a new God; it is *light,* physical light (p. 194), which is the vitalizing and energizing principle in the universe. There is no God of retribution, the soul is taboo, in Reiser's theory. For him the code of morals is nothing more than a set of social objectives. Well then, why have a religion, why look for a god, why concoct a code of ethics?

HENRY A. LUCKS.

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Studies in the History of Ideas. Vol. III. Edited by The Department of Philosophy of Columbia University. New York: Columbia University Press, 1935. Pp. 511.

The thirteen studies that make up this volume have no more in common than their place of origin, uniformly good quality and the fact that they are all what the title of the series indicates, studies in the history of ideas. To indicate the character of the volume, the simplest and also the best way is to list the titles and authors of the various studies. They are as follows: John Dewey: An Empirical Study of Empiricisms; Matthew Thompson McClure: Greek Genius and Race

Mixture; Richard McKeon: Renaissance and Method in Philosophy; Albert G. A. Balz: Cartesian Doctrine and the Animal Soul: an Incident in the Formation of the Modern Philosophical Tradition; Sterling P. Lamprecht: The Role of Descartes in Seventeenth-Century England; Frederick J. E. Woodbridge: Locke's Essay; Howard Selsam: Spinoza: Art and the Geometric Order; John Tull Baker: The Emergence of Space and Time in English Philosophy; Rudolf Kagey: Coleridge; Sidney Hook: Hegel and Marx; Herbert W. Schneider: Mill's Methods and Formal Logic; Ernest Nagel: "Impossible Numbers": a Chapter in the History of Modern Logic; Gail Kennedy: The Pragmatic Naturalism of Chauncey Wright.

It is evident that here is something for everybody. The present reviewer found Mr. McKeon's contribution on the Renaissance and philosophic method and that of Mr. Lamprecht on the history of Cartesianism in seventeenth-century England of particular interest and value. While it is not to be expected that all the contributions to a co-operative work such as this be of equal interest and value either in themselves or to their various readers, the variety and general excellence of the thirteen articles lead to unreserved recommendation of the volume in which they are found.

JOHN K. RYAN.

The Catholic University of America.

L'Itinéraire et L'Idéal Monastiques de Saint Augustin. By M. MELLET. Paris: Desclée de Brouwer et Cie, 1934. Pp. x + 150.

This is the fourth volume in the "Bibliothèque Augustinienne" published under the general direction of R. P. Fulbert Cayré, A. A. It is composed of conferences given in a Dominican convent in 1930, where the fifteenth centenary of the death of St. Augustine was celebrated. In the first part, the spiritual journey traveled by St. Augustine is traced from the time of his early aspirations to the establishment of regular life in his episcopal residence at Hippo. His life in three places marks this advance: Cassiciacum, Thagaste and Hippo. At Cassiciacum he was not yet by any means in the monastic life in fact; in spirit, however, he here began the new way of living which follows on the *conversio morum*, and developed the intense desire to belong to God alone. But it was at Thagaste that he lived the monastic life properly so-called, as he had learned it in the monasteries of Italy and from the monks of Egypt. His ideal of the Bishop's house at Hippo, when he was elevated to that See, was to make it a monastery of the clergy.

Poverty, chastity, and obedience were observed there, and the Divine Office said in choir. The monastic life by no means originated with Augustine; it had long been in existence. Augustine lent it his episcopal authority and would ordain no priest who would not embrace it.

The second part presents the monastic ideal of St. Augustine. He left no rule, properly so-called; what is called "The Rule of St. Augustine" is only a letter (No. 211) addressed to the nuns of Hippo on the occasion of an intrigue against his sister, who was then Superior. DeBruyne is of the opinion that this rule was transformed into a rule for men by St. Benedict. St. Benedict changed it from a personal letter to an objective form, making it really a new document, his first rule. What is now the Rule of St. Benedict followed later. Dom Morin, however, maintains that this change was first made at the famous Monastery of Cassiodorus, Vivarium. Over and above the letter, which is called the Rule of St. Augustine, we learn much about the common life which he introduced for his clergy from his sermons and other writings, especially *De opere Monachorum*. He saw in the love of private possessions the source of much evil, and insisted on poverty, both personal and collective. The various household works were committed to definite persons, and the sick were carefully attended. Charity was the bond which held all together, and made fraternal correction not only useful, but a real obligation. An element of mildness, in contrast to the severity of the monks of the desert, was introduced in the episcopal community at Hippo. He permitted the use of wine and a certain delicacy in the preparation of food. Above all, he insisted on kindness to the sick.

The center of the life of prayer was the recitation of the Canonical Hours. The unordained or lay members kept up the choral office in the monastery proper; the ordained clergy fulfilled this duty in the cathedral choir. For the observance of the long night vigils he insisted on what was not easy for the talkative Africans, the observance of silence. That they might better observe it, he allowed them to bring books for reading into the oratory, but urged that by preference they should make use of brief ejaculatory prayers.

The bibliography is made up of the best standard works on the Rule of St. Augustine and kindred literature. While brief, it is a compact list of some of the world's greatest scholars—Baxter, Dom de Bruyne, Le Clerc, Vermeersh, and others. If, for no other reason, this volume is one of the best that could be placed in a student's hands.

The Catholic University of America. FRANCIS A. WALSH.

The Idealistic Argument in recent British and American Philosophy. By G. Watts Cunningham. New York and London: The Century Co., 1933. Pp. xiii + 547.

The author, professor in the Sage School of Philosophy, dedicates his book "to the memory of James Edwin Creighton, under whose tutelage I first became acquainted with Idealistic Philosophy and who I like to think would not be wholly out of sympathy with the spirit of this treatment of it." The study is not a general history of British and American idealism, its sole aim "is to give a somewhat detailed account both expository and critical, of the chief arguments in support of an idealistic metaphysics expressed by British and American philosophers since the middle of the last century. However, no living author has been included and the reader's attention is directed only to the foundations which any serious account of the movement must uncover in the end and which, Professor Cunningham thinks, "have not yet perhaps received adequate analytical treatment."

The first part of the volume is made up entirely of the summaries of what the author considers the main formulations of the idealistic doctrine. Thirteen such formulations are presented to the reader: James Frederick Ferrier (1808-1864), Thomas Hill Green (1836-1882), John Grote (1813-1866), Francis Herbert Bradley (1846-1924), Bernard Bosanquet (1848-1923), Andrew Seth Pringle-Pattison (1856-1931), James Ward (1843-1925), John McTaggart Ellis McTaggart (1866-1925), Viscount Haldane (1856-1928), Josiah Royce (1855-1916), James Edwin Creighton (1861-1924), George Holmes Howison (1834-1916), and Borden Parker Bowne (1847-1910). Each author's independent statement is presented succinctly and accurately, with particular attention to his own special contribution to the historical development of the movement, and as "in most of the formulations, condensation obviously makes for clarity," the reader will appreciate the service he has been rendered by the conscientious analysis of these often obscure formulations and of the rather complicated arguments upon which they are based.

The second part is exclusively critical and its primary aim is "to fix, as precisely as possible, sundry difficulties that appear to be involved in the several historical formulations summarized in the first part of the study and to make explicit the underlying assumptions." Characterizing the main idealistic position (ch. XIV), the author rejects as not applying to any of the thinkers whose views he has been

studying the assertion that idealism denies the existence of matter. "One and all insist that matter in some sense is and that its nature must find satisfactory explanation in any philosophy." For them the fundamental tenet of idealism is that "the real nature of matter cannot in the end be adequately conceived without reference to mind or spirit as logically basal within the conception." Three main types of argument are brought forth in support of that position: a) the epistemological argument (Pringle-Pattison), which "seeks to ground the idealistic position primarily on cognitive experience, by showing that the ultimate implication of the fact of knowledge is a sentient world"; b) the argument *a contingentia mundi*, or, in Bosanquet's words, "inference from the imperfection of data and premises." Assuming that what satisfies the intellect is true and real, "it proceeds, through the inner disruption of experience, from fragmentariness to ideal completion under the guidance of the principle of non-contradiction or 'the spirit of the whole.'" If the motto of the first type of argument is "to be is to be known," the motto of the second is "to be is to be a whole or a world"; c) the ontological argument, that of McTaggart, which, instead of proceeding from true beliefs to existence, endeavors "to determine those general characteristics which apply to existence as a whole, or to everything that exists, whether these things are beliefs or not." The law of contradiction is its guide and its basal assumption is that what involves contradiction cannot be real.

There are, however, among the representatives of idealism certain differences which give rise to rather distinct types: a) One classification may be made with reference to differences of view concerning the different levels in the order of nature: while the spiritualists would reduce the entire order of nature to a society of spirits of various kinds and degrees, the dualists, though not denying the ultimacy of universal mind, deny that the levels of nature can be reduced to a society of minds; b) another classification is possible on the basis of different views concerning the relation between the whole of things (the universe) and finite human selves. Idealists are either absolutists (monists) who agree among themselves that finite human selves are 'elements' or 'aspects' of the sentient order of the universe called the Absolute, though they differ as to what is precisely the relationship between the finite selves and the Absolute, Pringle-Pattison and Royce being here in opposition to Bradley and Bosanquet and their view that human selves are "cursed by the vice of finiteness," or pluralistic personalists who resolve the Absolute into a Society of spirits and conceive finite

selves as members of this Society, some (McTaggart) rejecting, others (Ward) admitting God, the Infinite Self, as the head of that society of spirits.

Underlying these differences there are important issues which separate the different schools of idealism. Spiritualists and dualists admit the principle of continuity in nature but do not agree as to its significance. Whereas the spiritualists proceed by analogy from higher to lower levels of the order of nature and interpret the inorganic and merely organic after the analogy of the mental or spiritual, the dualists insist that the principle is perverted if used to that end, and urge with Pringle-Pattison "continuity of process and the emergence of real differences as the twin aspects of the cosmic history." The latter interpretation seems to have the author's preference. A second issue involved in the same controversy is the problem of the intelligibility of nature. "We could not have a rational experience," Creighton objects, "in a universe consisting solely of a community of freely acting psychic beings." Pringle-Pattison insists that panpsychism abolishes the concept of nature in the ordinary sense. In his discussion of this issue the author attempts to reconcile the two views of intelligibility represented on the one hand by Bosanquet, who makes the order of existence the criterion of intelligibility, and on the other by Pringle-Pattison and McTaggart, who see in intelligibility the criterion of that order. The thesis he defends is that "each of these views is correct in what it implicitly affirms and between them there is no necessary contradiction" or that "intelligibility is a characteristic of the order of existence, and it is also a characteristic of intelligence itself."

The next problem is that of individuality. All idealists emphasize the basal significance of the individual for philosophical construction and all seek to express the deeper implications of individuality, but the principle of individuality is variously interpreted, with the result that mind is given diverse readings. The personalist is impressed by the uniqueness and existential distinctness of the finite individual, and for this reason he deems the Absolute untenable. To the absolutist on the contrary the unity of the finite individual seems only a matter of degree; its essential character is its quality of universality, of which the Absolute is merely the actualization. However both look upon the individual as a center of reference in finite experience. In the author's view "the controversy between personalist and absolutist concerning the principle of individuality must be decided, in part at least, against

the absolutist." The last issue, closely connected with the preceding one, concerns the intelligibility of the Absolute. While Haldane and Creighton claim that finite minds can survey conceptually even the region of the Absolute, Bradley maintains, and here the theistic personalists are in fundamental agreement with him, that the Absolute, though logically a necessary category, is not intelligible in precisely the sense which Haldane and Creighton desire.

In his "concluding comment," the author points out the problem of knowledge as of fundamental importance for philosophical construction. "Is meaning, as a characteristic of the cognitive situation, wholly immanent in the situation in which it logically functions, or is it also transcendent in respect to that situation? If the latter, to what does it point? Is it transcendent in the further sense that it is utterly independent of the situation? And in any case, what is the status of the object *per se* and in what sense may it be said to be meaningful?" To these questions he had answered in the Preface: The tenets of the theory of knowledge expressed in the assumptions underlying the idealistic argument "are chiefly two—namely, that the cognitive situation is essentially self-transcendent and that reality is the context within which such transcendence finds its logical ground." In these tenets and what they entail he finds the major contribution to philosophy of the British and American idealistic tradition.

Were this insistence on the theory of knowledge as a necessary prerequisite to metaphysics the only contribution of the author to sound philosophical thinking, he would deserve our thanks, but his work may serve also as a valuable introduction to an interpretation of the universe which is indeed very far apart from Christian theism, but which is accepted by too many and too eminent thinkers of our own time to be ignored by the student who has taken as his motto the *vetera novis augere*, who is in possession of the criterion by which he will recognize the grain of truth among the chaff of errors and theories, and whose sympathy is due to the sincere efforts of all honest seekers after truth.

The Basselin Foundation,
The Catholic University of America.
J. A. Baisnée.

Passivity and Rationalization. By Nathan Fialko. New York: John Lowell Pratt, 1935. Pp. 212.

This is one of those weird products of a materialistic mysticism, such as fell from the lips of Ammonius Saccas and captivated the conscience

of the conscienceless Julian the Apostate. In one breath it is pietistic, revelling in the transcendency of St. Augustine; in the next, it is despairing, caught by the hopeless dualism which re-echoed from Mithra into Rome, and ensnared even the intellect of the Jew, Philo. This system would make religion so remote from the social that it will be offensive even to make inquiry about it. It can never become an intellectual system. The author, following hard on his analysis of the past and his study of "creation-destruction-rationalization," devotes the third part of his book to current themes. This part is a pageant of despair "the helplessness of the individual". This helplessness consists in a disability of self-realization, and is a product of civilization. The possibilities of the slave were limited, but he was not helpless; there was a range of life within which his activities were untrammeled. The slave was deprived of all legal rights; the helpless individual of the civilized world is guaranteed his civil liberty and rights. But he is deprived of self-expression and would prefer serfdom or even slavery. Two features characterize this helplessness: disability and dependency.

To determine just what the author is attempting to say is not easy. He speaks of organized factors, passive forces, individual organism, transformation, etc., in a manner that leaves the reader confused. Sometimes in line with recent political strategy, he goes alphabetical: IPC—inherited psychic content; APC—acquired psychic content. To him, a contingency is real because it is an act. The individual contingency is one creative act, a creation of man, an element of conceivable reality. A contingency has quanto-qualitative attributes, which are constituted largely by variations of the alphabetical characteristics just mentioned.

The long oppression of our present economic system has made the individual a helpless man, consciously passive. In this consciousness are found some properties of his oppressor. The exercise of these new qualities constitutes rationalization. In this manner, passive contingencies becomes the instrument of social creativity. Fialko's mind seems to be this: In the helpless state produced by the economic past, the individual has been sunken into the mass. The awakening rationalization is social; that is, a conscious link joins one man with another so that in fact the multitude is really a unit. In the state which is to come the individual is a social personality; he represents and includes his group.

Vague and unmeaning statements abound; for example (page 202), "The individual as a human being is infinite. No limits can be indi-

cated to the body as to its beginnings, its presence, or its ulterior development." The Founder of Christianity permitted an error, " which cannot be seen through the spirit of religion, yet is quite understandable from a philosophical point of view." The error lies in this, that religion can be communicated to others. Fialko believes that religion cannot be learned from the words or acts of others. He insists strongly that a social religion cannot exist as the Truth.

This difficult book really sings a song of despair. It looks upon leadership as a thing of the past; actual values are only found in the emergence of dominant, although brutal, ideas from the starved brains of the struggling multitude. This thought is purely mechanistic; no place is left for freedom of the will, personal responsibility, or individual immortality. What happens happens because of some kind of forced struggle; the power at work is blind; it has neither intelligence nor love. As the author says, speaking of the future, " The new church must be a rational church. It is the church of approach to Death."

No real contribution to philosophy or social science is made by this book. The author lives in a universe of his own creation. He brings no evidences to establish the agreement of his statements with facts. Books like this bring philosophy into disrepute. No real meaning can be abstracted from most of its pages. Very likely all that the author really means could be said in a single sentence.

FRANCIS A. WALSH.

The Catholic University of America.

God, His Existence and His Nature: A Thomistic Solution of Certain Agnostic Antinomies. By R. GARRIGOU-LAGRANGE. (Translated from the Fifth French Edition by Dom Bede Rose.) Two volumes. St. Louis: B. Herder Book Co. Vol. I: Pp. xv + 392. Vol. II: Pp. vi + 576.

Father Garrigou-Lagrange's work originally appeared in French in 1915 and, as he himself wrote a few years later, the first and second editions were quickly exhausted in spite of the difficulties caused by the war. That interest in this work has continued is evidenced by the fact that it has already reached its fifth edition. This interest is also evidenced by the increasing use of the work on the part of both Scholastic and non-Scholastic writers in the field of theodicy and allied studies. Because the work is so widely and firmly established as authoritative

in its field, its appearance in English does not necessitate an extended review.

Yet for the benefit of students both Scholastic and non-Scholastic not yet familiar with *God, His Existence and Nature* it may be well to indicate the richness and variety of the material to be found in this work. Volume I of the English translation, which is "Part 1" of the original French work, is divided into three main sections, under the general heading of "The Existence of God". Of these three sections, the first discusses what the Catholic Church teaches concerning the nature and existence of God and the knowledge to be gained of Him by natural reason; the second section discusses the possibility of proving the existence of God; the third is an exposition of the five main ways of proving His existence. The second volume contains five long chapters on the general subject of the nature of God and His attributes. The first of these treats of what formally constitutes the divine nature according to man's imperfect mode of knowing it; the second discusses the derivation of the attributes from self-subsisting being; the third, the reconciliation of the divine attributes; the fifth, the special antinomies relating to freedom; the sixth, God's ineffability and the absurdity of the unknowable. The work also contains appendixes and an epilogue on various cognate subjects. In brief, the almost one thousand pages of this work are a veritable mine of material for students of the profoundest and most important of philosophical problems.

An English translation of Garrigou-Lagrange's distinguished work was long needed and gratitude is due to Dom Bede Rose, of St. Benedict's Abbey, Mount Angel, Oregon, not only for having supplied this translation but also for having done so complete and satisfactory a job. The translation is accurate and faithful. The awkwardness and heaviness too often met in translations of philosophical works are happily absent. The present translation has that "athletic nudity" proper to a work of scholarship with its consequent advantages of easy and unrestricted movement. In short, the present work is highly recommended both because of the subject-matter of the original work and because of its English presentation. It should find a place in the library of every institution and individual that make pretensions to a concern for the study of contemporary philosophy in its most serious form.

JOHN K. RYAN.

The Catholic University of America.

A History of Jewish Literature from the close of the Bible to our own days. Vol. II: From the Twelfth Century to the Middle of the Eighteenth Century. By MEYER WAXMAN. New York: Bloch Publishing Co., 1933. Pp. x + 698.

The author of this work has made available to the large intelligent lay public the most complete picture that can be had today—not only in English but, within its restricted limits, in any modern language—of the productivity of the Jewish genius during the centuries here surveyed. A vast amount of research work has been carried on during the last century in the various branches of Jewish literature, and the results of these labors have been made part of the picture here presented. It is quite evident that this new work is well adapted to serve as a convenient compendium and reference book for students in Jewish theological seminaries, teachers' colleges, and departments of Jewish studies in universities. But its appeal and its usefulness should extend beyond the class-room, because knowledge of Jewish literature is comparatively rare and meagre not only among non-Jews who are interested in matters Jewish but also among Jews and even in the higher intellectual circles. The author, therefore, made it his chief aim to come to the aid of this larger interested public and to supply the urgent need for adequate information upon the intellectual and spiritual activity of Jewry during the long post-Biblical period. For this reason, likewise, he decided to present his work in an easily readable, non-technical manner. The discussion of most questions has been banned. Footnotes have been reduced to a minimum. All Hebrew phrases and Hebrew titles of books and treatises have been transliterated so as to make the work more palatable to those not conversant with the Hebrew language. Those among the readers who may feel that the author has limited the usefulness of his work by the systematic omission from it of full titles and detailed references to the published writings of the various ancient authors and to the manuscripts and libraries where some of their unpublished writings can still be found and studied must console themselves with the hope—possibly a promise—expressed by the author that some time in the future he may bring out a special edition where these technical 'impedimenta' of scholarship will be fully arrayed and recorded. In the meantime a short selected bibliography at the end of the volume will offer some guidance to those intent upon further researches.

By far the greater portion of the literature here surveyed is religious

and philosophical, and nearly all of it was written in Hebrew. The Arabic language which, during the preceding 'golden age' of Jewish literature, had been an important medium of expression had yielded its place to Hebrew which, as the language of the synagogue and of the rabbinical schools, held a universal sway allowing of no serious literary rival, although the Judaeo-German or Yiddish dialect, between the thirteenth and the fifteenth centuries, began to bring forth a distinctive literature of its own. This literature, however, addressed itself chiefly to the feminine part of the Jewish population and to the uneducated, and, as a consequence, it assumed on the one hand a more secular aspect and on the other it became the vehicle also of many pious ethical works and of books of popular instruction.

All Jewish life during the latter half of the Middle Ages was tending, for reasons not of its own choosing, to become more and more restricted and exclusive, yet some contact always existed between it and the general life around it. "Movements and stirrings which took place in the larger sphere were always echoed and reflected in the Jewish world, and first, of course, in its literature." It is thus that the eras of 'Scholasticism,' 'the minne-singers,' of the 'Renaissance' and its 'humanism' left their distinct traces, upon Jewish literature, and the student of mediaeval history and mediaeval institutions cannot well afford entirely to overlook this vast and interesting field of research. It had been the author's original plan that this second volume should bring his 'History' to a close. But because of the large number of writers and the vast quantity of books produced during the 'silver age' and 'brass age' of Jewish literature (the 'golden age' having ended with Maimonides in Vol. I) Dr. Waxman found it necessary to relegate the whole of the modern period to a future third volume.

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CURRENT PHILOSOPHICAL REVIEWS

Angelicum—Annus XII, Fasc. 4: October-December, 1935.

D. Trapp: *Aegidii Romani de doctrina modorum.* Although the question of the distinction between the nature and the suppositum of a person has long been a subject for discussion, theological history has almost entirely overlooked the solution offered by Aegidius Romanus. This solution is of primary importance to the evolution of this question. It consists in a real, modal distinction, which is, nevertheless, somewhat akin to that of Scotus. Aegidius recognizes a mode that may be conceived as accidental but which is *illud elementum naturae, quo omnes uniones fiunt in natura.*

Angelicum—Annus XIII, Fasc. 1: January, 1936.

R. Villeneuve: *Ite ad Thomam*: The Church has always looked upon St. Thomas Aquinas as "*le Docteur commun de toute la chrétienté.*" Unfortunately, with the advent of the Renaissance and the Protestant Revolt, the teachings of the Angelic Doctor were rejected by the majority of men. His doctrines were retained only within the Church and, even here, their characteristic vitality was, for the most part, lacking. It was not until Leo XIII published his encyclical, *Aeterni Patris*, that the genuine revival of Scholasticism was initiated. Due to the personal efforts of the subsequent Sovereign Pontiffs and, especially, to the encyclical, "*Studiorum ducem*," by Pius XI, the Neo-Scholastic movement has continued in the ascendency. **A. Fernández-Alonzô:** *Scientiae et philosophia secundum S. Albertum Magnum.* Many of the errors prevalent today arise from the false notion of the relation between science and philosophy. A large number of people think that the two are essentially distinct because philosophy seeks ultimate while science pursues proximate causes. However, if considered from the viewpoint of the three grades of abstraction, such a science as Mathematics, which is in the second degree of abstraction, is more closely allied with Metaphysics than is such natural philosophy, as Cosmology or Psychology, for "*illa* (natural philosophy) *enim est in primo abstractionis gradu et metaphysica in supremo: unde non solum differunt, sed maxime differunt. Si enim metaphysicam omnes specifice a mathematica distinguunt, a fortiori eadem distinctio est respectu naturalis philosophiae asserenda.*" Accordingly, in our approach to philosophy we should adopt the attitude of St. Albert the Great: "*Qui* (*enim*) *in natura rationes motus et sensus negligit, cum tota natura sit de sensibilibus et mobilibus, parat se ad decipiendum se et alios.* **I. M. Bochenski:** *Notiones historiae logicae formalis.* The development of formal logic has been a long and interesting process. In addition to European logic, the name generally predicated of the logic with which we are acquainted, a totally independent logic has evolved among the Indians. European logic may be said to have originated with Aristotle whence it has passed through four successive periods

down to the present or fifth era—the age of Logistics. On the other hand, Indian logic may be said to have begun in the third century A. D. seemingly uninfluenced by its predecessor and contemporary. It evolved through three stages, until, due to the influx of European logic, it passed out of existence in the middle of the nineteenth century.

Collectanea Franciscana—Annus V, Fasc. IV: October, 1935.

Pius M. a Mondreganes: *De Impossibilitate aeternae creationis mundi ad mentem S. Bonaventurae.* An extended discussion of this subject. In conclusion it is stated that the creature was always possible, but possible to exist with time, not in eternity. It is one thing to have possibility from eternity, another to be created from eternity. Creation could not be eternal not because God could not create, but because the creature could not be made from eternity. This issue also includes (1) *Recensiones operum Franciscalium*; (2) *Bibliographia Franciscana, 1932-33*; (3) *Recensiones operum non Franciscalium.*

Divus Thomas (*Freiburg*)—13. Band, 4. Heft: December, 1935.

Anselm Stolz: *Mystik und christliches Lebensideal.* Some considerations of the mystical life based on the teaching of theologians that Paradise as an actual place still exists, and that it is distinguished from the Kingdom of Heaven, being in fact a place for souls to remain in before entering the Kingdom of Heaven at the end of the world. These souls have here a direct vision of God, and are thus distinguished from the state in which Adam lived. The writer shows the necessity of the mystical life for all Christians striving for perfection. **A. Rohner:** *Die acht Seligkeiten.* A comparison between the exposition of St. Thomas Aquinas on the eight beatitudes and that of St. Theresa of Jesus as expressed in her *The Castle of the Soul.* In both holiness is regarded as the perfect fruit of two principles, one subjective, namely freedom, and the other objective, namely grace. This issue also includes: **M. Grabmann:** *Bernhard von Trilia O. P.* († 1292) *und seine Quaestiones de cognitione animae coniunctae corpori und de cognitione animae separatae* **C. v. Schaezler:** *Das subjektive oder Material-Prinzip der Ethik. Die Plastik des Sittlichen* (*Fortsetzung und Schluss*).

Divus Thomas (*Piacenza*)—Vol. XXXIX, No. 1: January-February, 1936.

St. Bersani: *De Intrinseca Mendacii Deformitate.* An attempted reconciliation of the difficulty arising between the intrinsic malice of lying and the necessity at times of speaking falsely (*contra mentem*) with the intention of deceiving. The proposed solution places the malice of lying in that it injures the right of a man that he be not deceived. Therefore to speak falsely becomes licit when this right ceases, namely, when the necessity of a secret to be preserved or the right of self-protection demands the cessation or another's right. The recent opinions of Vermeersch and Brouillard are analysed in relation to this argumentation. The teachings of both St. Augustine and St. Thomas appear to allow this explanation. **P. B. Bardessono:** *La "Vita eterna" in San Giovanni.* In contrast to the Synoptics,

the central theme of the Gospel of St. John is the teaching of Christ on the dogma of eternal life. What, then, is the precise nature of this "eternal life" which the Son of God communicates to us? It signifies a reality at once both present and future. As present, it consists in a good moral life of which the Word is the principle, illuminating the intellect to truth and the will to goodness; secondly, the resulting union with the Word. Examining the nature of the "eternal life" more closely, as it is contained in the Gospel, it consists essentially in sanctifying grace, the "seed of divine life" produced in us by God. **M. H. Laurent:** *Maître Pierre d'Espagne fut-il Dominicain?* This article treats of the identity of Pierre d'Espagne, author of the *Summulae Logicales.* It reviews summarily the opinions of those who maintain, according to the *Tabula de Stams,* that he was Pierre Ferrand d'Espagne, the Dominican, rather than Pierre Juliani who ascended the papacy as John XXI. The view drawn from the *Tabula de Stams* appears to be erroneous due to errors made by copyists. As a consequence it rejects the authorship as attributed to the Dominican, and holds the author to be John XXI.

Gregorianum—Anno XVI, Fasc. IV, 1935, Vol. XVI.

C. Boyer: *La Pensée de M. Maurice Blondel et la Theologie* Admitting the difficulty of interpreting M. Blondel, the author acknowledges the realism of his doctrine. A brief summary of his *La Pensée* follows. Dissipating possible doubts concerning the problem of God the interpretation of the traditional proofs is recognized as acceptable. On the problem of the supernatural, i. e., the natural desire of the vision of God, a distinction must be made: the inability of man to attain this end by his natural forces alone is clearly set forth; as to the exigency of this end, a doubt remains. Although a real natural exigency is explicitly excluded in various parts of the text; however it sometimes appears that this exigency be an integral part of the whole of the doctrine. Concerning the question of salutary acts the position held is orthodox. Concluding, the author praises wholeheartedly the merits of this work, in particular its profundity and courage. **G. G. Walsh:** The Doctrine of Saint Thomas in the *Convivio* of Dante. It is a question of whether Dante was influenced by neo-platonism and Averroism. The author establishes that the philosophical doctrine of the poet is Thomistic and in particular that of the *Convivio.* Much is cited from the commentary recently edited by Father Giovanni Busnelli, which has shed much new light and solved many difficulties. **F. Pelster:** *Die Uebersetzungen der Aristotelischen Metaphysik in den Werken des Heilige Thomas von Aquin.* This is the third instalment of a work begun in a previous number. The present article deals with the translation used in the Commentary on the Metaphysics of Aristotle. According to an old tradition, Aquinas brought about the Moerbeke translation and accordingly used this new translation. Others have disagreed with this, E. B. Geyer, suggesting that he used others, and A. Dondaine indicating only one translation for the whole work, namely, the *Media.* By textual comparisons the author concludes that several translations were used.

Philosophisches Jahrbuch der Goerres-Gesellschaft—48. Band, 4. Heft. 1935.

Wilhelm Keilbach: *Die Krise der Religionsphilosophie.* For Protestants the study of the Philosophy of Religion depends naturally to a great extent on the differences between the many sects; for Catholics it was long considered identical with Theodicy. However, after the War Catholics began to study this field in an attempt to determine the religious concepts that could be learned from reason alone, and then compared these with actual revelation. This article is prompted by a changed view of the subject presented by G. Rosenmöller in his *Religions Philosophie*, Muenster, 1932. **Karl Gladen:** *Die Glaubensphilosophie Kardinal Newmans.* The writer draws a comparison between the philosophy of Newman and that of St. Thomas, showing that while they were fundamentally the same their methods differed because of the varied conditions of the times in which each wrote. Newman's method is shown to have been psychological; that of the Angelic Doctor metaphysical. The article is based chiefly on the *Grammar of Assent.* This issue also contains: **F. Pelster:** *Um die Datierung Alberts des Grossen Aristotelesparaphrase.* **Karl Gumpricht:** *Das lebensphilosophische Denken des reisenden Goerres.* 1799-1808.

Revue d'Histoire de la Philosophie et d'Histoire Générale de la Civilisation—Nouvelle série, Fasc. 11: 15 July, 1935. Numéro spécial consacré a l'Allemagne.

F. Piquet: *Le préjugé raciste.* A résumé of German history, psychology, customs, literature, and art disallows the assumed self-sufficiency of the Nordic prejudice. **Lêon Mis:** *Nietzsche et Stefan George, précurseurs du Troisième Reich.* The fundamental hostility of Nietzsche to narrow nationalism and democracy, and of George to an exclusive German self-sufficiency forbid their being justly acclaimed prophets of the Third Reich. **René Hubert:** *Sous le signe de la métaphysique. De quelques caractères constitutifs de la pensée germanique.* A presentation of the powerful rôle of metaphysics in almost all aspects of German culture, and of German political and social organization. **J. Lhomme:** *L'économie allemande contemporaine.* A brief sketch of various aspects of German economics under National-Socialism. **Albert Buesche:** *L'art allemand depuis 1900.* A brief survey.

Revue Neoscolastique de Philosophie—T. 38 (2ieme serie, No. 48): November, 1935.

H. Thielemans: *La Metaphysique de l'Instinct.* The author proposes to confront the biologist with a metaphysical conception of what seems to correspond to instinct, leaving the final pronouncement, moreover, as to the reality of this correspondance to the biologist. He finds that a living being of, what he calls, the second degree (animals) is governed in its activity by abstract directive principles, according to a specific intentional plan of life, in virtue of which its acts are adapted to its spatio-temporal environment. In conclusion, the author offers the results of his deductions to the biologist to ascertain whether or not metaphysics and biology can

confirm one another on this point. **M. Thomas:** *La Biologie de l'Instinct.* The following article is the answer to the problem posed in the preceding one. In opposition to the behaviorists and in the name of experience the author establishes the reality of instinct. By experimentation on life and its degrees, together with decisive solutions to the objections of his adversaries, he rejoins the metaphysician in his conclusion, confirming formally the latter to the very terms of his definition. **J. Dopp:** *Une Forme Personnaliste de l'Idealisme:* la Philosophie de M. Lachieze-Rey. Being chiefly expository, this article attempts to give a " vue d'ensemble " of the doctrine of this French idealist. Thoroughly Kantian in its substance, it presents none the less a decidedly original character. The constructive dynamism of the mind, which accords primarily to the act of the mind rather than to its content is the keynote of the entire thesis. Recognising however the limits of the *ego constructeur*, M. L. Rey is led to integrate a theistic philosophy of religion in his system, comprising a telling criticism of the pantheistic idealists, in particular, M. Brunschvicg. In conclusion, M. Dopp essays a few *rapprochements.* **M. De Corte:** *L'Ontologie existentielle de M. Gabriel Marcel.* M. Marcel, setting out from neo-Hegelianism, makes his way toward realism in the form of an actualistic existentialism. His point of departure takes the form of a double critique, the one of idealism, the other of radical objectivism. The problem of subject and object is a false one, for they both are insparable from existence, in which they participate equally. It is the task of metaphysics to excorcise despair in its various degrees, which in general is the stopping at exterior things and the negation of the mystery of being and existence. By hope we transcend all this; the archetype of hope is the hope of salvation. The aim of ontology should be to lead us humbly into the mystery of the " metaproblematic " and of our existence. M. De Corte, in his criticism, perceives that the doctrine is not completely liberated from idealism, and that is also tainted with empiricism, since it refuses to treat of being in the metaphysical sense. Finally, he asserts that it is more phenomenological than ontological.

Revue Thomiste—Nouvelle série. T. XIX, No. 93: January-February, 1936.

Marcel de Corte: *De la Jeunesse et de la Vieillesse métaphysiques.* A critique of L. Brunschvig, particularly his: *Les Ages de l'Intelligence.* **Gaston Rabeau:** *Sur quelques travaux d'histoire des sciences.* A review of some recent French histories of science, and a brief history of the sciences in antiquity.

Revue des Sciences Philosophiques et Théologiques—Vingt-cinquième Année, No. 1: January, 1936.

C. Pera: *Denys le mystique et la* ΘΕΟΜΑΧΙΑ. A study of the *Corpus Dionysianum* in the doctrinal milieu of the second half of the fourth century throws light on its mysteries, and locates its inspiration in Basil the Great rather than Cyril of Alexander. **M. L. G. Des Lauriers:** *L'activité de juge-*

ment. II. *Intelligibilité et existence.* In a mathematical judgment there are two elements: intelligibility and existence; between the two there is a real relation.

Revue de l'Université d'Ottawa—Vol. VI, No. 1: January, March, 1936.

Georges Simard: *Les thomistes et saint Augustin.* Reflections on the life and significance of St. Augustine. In our own time Augustine would be a Thomist without ceasing to be himself. **Eugene A. Dooley:** *Religion and Superstition.* Part I. Superstitions in religions: a brief résumé of the principal superstitions in religions based on St. Augustine, St. Thomas and others. Part II. Laws against Superstitions: Authorities quoted are Tertullian, Augustine, Newman, Benedictine XIV, the new code of canon. **Lucien Morand:** *La valeur économique.* Synopses of various theories of economic value: Adam Smith, Ricardo, Marx. **Anselme Longpré.** *La théologie mystique de saint Jean de la Croix.* St. John of the Cross insists on mortification and detachment from creatures. Following St. Augustine and St. Thomas he maintains throughout his work the universal causality of God. **Anthime Desnoyers:** *L'essence de la perfection chrétienne selon saint Thomas d'Aquin.* (Conclusion.) Consideration of the following topics: love of God and of neighbor; the habit and acts of charity; the love of desire and the love of friendship; affective charity and effective charity; the species and degrees of perfection. **Henri Matte:** *La présence de Dieu dans l'âme.* An exposé of the doctrine of St. Thomas with appeal also to the work of Suarez, Vasquez, St. John of the Cross and others. **Rodolphe Hain:** *De Hylemorphismo rite demonstrando.* Conclusion of the article in which the harmony of hylemorphism with the natural sciences is shown.

The International Journal of Ethics—Vol. XLVI, No. 2: January, 1936.

Charles E. Merriam: Putting Politics in Its Place. The modern world suffers from a lack of balance between what is called the political and what is called the economic; from a lack of working interrelationship between them and between politics and the larger social whole. The basic troubles of our time are not fundamentally economic alone but are scientific and technological, territorial-racial, socio-political. The organization of the old value systems and the new science in forms and practices adapted to our emerging problems is the root problem of the present age. **T. V. Smith:** The Ethics of Fascism. The one real value of fascism which shines above all pretended values is that of community. **John R. Reid:** Naturalistic Standards. The validity possible to standards cannot possess an a priori universality and necessity. Value in the generic and positive sense of the term is any felt qualitative phase of experience which is liked, enjoyed, delighted in, found satisfactory. In the last analysis there are no standards *of* value, but value, in its various forms and degrees, generates its own standard, as well as the moral standard of everything else. Generically, it is the one end that makes action reasonable; and the sole function of reason is to help create and conserve it. **Louise M. Rosenblatt:** The writer's Dilemma: A Case History and a Critique. The case history is that of

Stevenson and his more or less secret revolt against the restrictions placed by Victorian morality upon the writer. Today we live in an age when in some countries the artist is more completely censored than in Stevenson's time. Are democratic countries, in matters vitally important to them, more liberal than the Victorians? It is important for welfare of culture as well as for the flowering of the artist's own genius that each artistic temperament should be free to find its own medium, its own materials. **F. C. Sharp and Philip G. Fox:** "Caveat Emptor." The general principle is that both buyer and seller have the moral right to all the available data upon which an agreement of purchase and sale is based. Silence is justified (1) in the face of an attempted "holdup", which aims to take advantage of other people's future plans and labors; (2) where the value of the subject of sale is not a "fact" capable of somewhat accurate determination, but a mere matter of "opinion". **D. M. Datta:** The Moral Conception of Nature in Indian Philosophy. Thoroughgoing naturalism never flourished in any of the systematized schools of Indian philosophy. The conception that nature, even if possessing a distinct existence, subserves the moral needs of spirits by bringing about events according to deserts was never rejected.

The Journal of Philosophy—Vol. XXXII, No. 26: December 19, 1935.

John Dewey: Peirce's Theory of Quality. Quality is that which totally and intimately pervades a phenomenon or experience, rendering it just the one experience which it is. Peirce, above all modern philosophers, has opened the road which permits a truly experimential philosophy to be developed. **Newton P. Stallknecht:** Subject and Object in Esthetics. Beauty belongs to neither subject nor object, but to their actual relation one to another, a nexus of subjective intention and objective material.

The Journal of Philosophy—Vol. XXXIII, No. 1: January 2, 1936.

Ernest Nagel: Impressions and Appraisals of Analytic Philosophy in Europe. I. A report on the philosophy professed at Cambridge, Vienna, Prague, Warsaw and Lwów. The men met there are concerned with method. Common-sense naturalists, they are impatient of traditional systems and uninterested in the history of philosophy. The work of G. E. Moore and Ludwig Wittgenstein of Cambridge is discussed in this paper. Wittgenstein's primary concern is with the clarification of the meanings of expressions. The cardinal principle of Moore's philosophy is not to reject in philosophy what one can not help accepting in daily life. A second principle is that accepted propositions are expressed in a language whose meaning everyone understands.

The Journal of Philosophy—Vol. XXXIII, No. 2: January 16, 1936.

Ernest Nagel: Impressions and Appraisals of Analytic Philosophy in Europe. II. A report on the history and activities of the **Wiener Kreis**: the work of Carnap is discussed at length. In Poland, a nominalistic naturalism seems to be part of the orthodoxy of most universities. The work of Lukasiewicz, Lesniewski and Chwistek, among others, is discussed briefly.

The Journal of Philosophy—Vol. XXXIII, No. 3: January 30, 1936.

Eliseo Vivas: The Esthetic Judgment. The basic reason for rejecting both the relational and the subjectivistic views is that they deny the deliverance of experience, for which beauty resides *in* the object. If philosophy aims to explain experience and not to deny its character, an analysis which starts from the basic fact that beauty is in the object and which ends by denying this fact, must remain suspect until ti can be shown that no alternative is possible. Esthetic judgment is objective in that it refers to qualities in the object and to values residing as tertiary upon the secondary qualities of an object, for a group. **W. Donald Oliver:** The Concept and the Thing. The concept is a history, a collection of events culled from the experience of the individual supplemented by that of his fellows in a common world.

The Journal of Philosophy—Vol. XXXIII, No. 4: February 13, 1936.

Blanchard W. Means: Freedom, Indeterminacy, and Value. Indeterminism as such not only does not, but can not, lead to freedom of the will. Our own immediate evidence of freedom goes directly to limit the reality of any ultimate indeterminacy underlying the modern statistical of science. **C. J. Ducasse:** Mr. Collingwood on Philosophical Method. An adverse criticism of the principles advanced in Collingwood's recent volume on method. Collingwood fails wholly to establish any of the premises upon which he bases his methodological conclusions. Moreover, these premises are demonstrably false.

The Journal of Philosophy—Vol. XXXIII, No. 5: February 27, 1936.

Robert C. Baldwin: Teleology and the Idea of Value. Teleology remains although finality is dead. Either accept a teleology that has not been bled dry of meaning, and prepare to take the consequences or consistently refuse to have commerce with teleology altogether. The thesis is supported by arguments deriving from Henderson, Hobhouse and Bosanquet.

This issue also contains digests of papers read at the December meeting of the Pacific division of the American Philosophical Association.

The Modern Schoolman—Vol. XIII, No. 2: January, 1936.

Herbert C. Noonan: The State and Natural Rights. The doctrine of natural right based on natural law is defended. Various authorities both ancient and modern are quoted for and against this doctrine. **Bernard Jansen:** Maréchal's Theory of Dynamic Cognition. Maréchal is recognized as the most profound and original contemporary representative of Christian philosophy. He holds that the cognition of transcendental, especially immaterial, realities is possible. The phenomenal has a meaning only if the noumenal is behind it, because the relative is measured by the absolute. He is not an Ontologist: God is in no way the first-known object of human understanding, nor is God known in the judgments which do not explicitly have Him as object. Dynamic cognition lays open in a profound and lucid way the last sources of the metaphysics of cognition no less than the cognition of metaphysics. **Paul Siwek:** Final Causes in the System of

Spinoza. To follow the geometrical method completely Spinoza had to make tremendous sacrifices. He had to exclude final causes even before making an inquiry into them. His assertion that final causes and free will are linked together was not altogether wrong. Both were sacrificed to the idol of geometry. **Edward Brueggeman:** A Linguistic Psychology. It is thought by many that Marcel Jousse, S. J., has solved the profound mystery of language. He studies the psychological reactions of the human composite to external stimuli, spoken or written words. *Ratio* and *manus* together form the unity of the discursive intellect with our motor organs, with unity affected in the *geste*, especially the manual *geste* from which in turn is born the spoken word. Jousse's doctrine harmonizes with Thomism and dissipates many problems raised by Cartesian rationalism.

The Modern Schoolman—Vol. XIII, No. 3: March, 1936.

Peter Johanns: Scholasticism and the Vedanta. The Vendanta needs to be recast in a higher synthesis where its opposed elements would reveal themselves as complementary. Since no Vendantic system admits *creatio ex nihilo* the needed synthesis is that of *analogia entis*. **Thomas E. Davitt:** Causality in Organisms. Efficient causality is not limited to mechanical influences external to the body affected: it embraces the internal self-determination found in even the most elementary particles of nature. The principle of causality is ectualized in every act, including the act of questioning its validity. **Edward Day Stewart:** The Victorian Weltanschauung. The age was consciously striving for a *weltanschauung*, as is indicated by the vogue of the term, but the effort broke down even before the end of the century. **Alfred Delp:** Modern German Existential Philosophy. The background and present state of German philosophy are discussed. Heidegger's work is given special consideration. **Ignatius M. Wilkinson:** The Scholastic Heritage of Our Law. Our law is Scholastic in its metaphysics: it recognizes a mind-independent objective order. It also admits freedom of will, the possibility of truth and other traditional doctrines. Scholasticism can only be taken out of the law by destroying the fabric itself.

The Philosophical Review—Vol. XLV, No. 1: Whole No. 265: January, 1936.

André Lalande: Philosophy in France, 1934-1935. Includes a review of the work of the late Edmond Goblot, who wrote *Essai sur la classification des sciences, Le Système des sciences, Traité de logique, Justice et liberté, La barrière et le niveau* and *Logique des jugements de valeur*. Blondel's latest work is considered and Blondel's influence is seen in Jacques Paliard's *Le Monde des idoles*. Le Senne's *Obstacle et valeur* is described as a religious work displaying remarkable philosophical vigor and rare style. The work of Gabriel Marcel, among others, is also given extended consideration. **Arthur Liebert:** Contemporary German Philosophy. Extended consideration is given to the works of Othmar Spann, Theodor Litt, Paul Haeberlin, Jakob Klatzkin, Herbert Cyarz and others. *Die Sendung der Philosophie in unserer Zeit* is described as a timely and noteworthy work arising from a threefold anxiety: anxiety for contemporary life, from

which nobility is vanishing; anxiety for philosophy itself; anxiety for the leadership of philosophy in life. **A. K. Rogers:** Plato's Theory of Forms. (Conclusion) Discussion of what Plato understands by the Good as the most fundamental of all forms; the problem of evil; Plato's mysticism.

The Philosophical Review—Vol. XLV, 2: Whole No. 266: March, 1936.

Stephen C. Pepper: The Quest for Ignorance or the Reasonable Limits of Skepticism. What is the maximum of a reasonable unbelief? Black skeptics, e. g., Santayana and Hume, are unreasonable men who insist on knowing now precisely what is and what is not fact or knowledge. Gray skepticism admits as much ignorance as a reasonable skeptic can accept. In its mild light is seen a sea of uncriticized facts out of which criticized facts generate. **James B. Pratt:** The Present Status of the Mind-Body Problem. Popular monism has so strong a social backing that no one can fail to hear it. May not the desire to reject interaction be really due to a socially approved taste and to the wish to defend a preconceived faith, rather than to any compulsory reasons or to a cold review of all the relevant considerations?

The Proceedings of the American Philosophical Association for 1935 are also included in this issue.

Philosophy—Vol. XI, No. 41: January, 1936.

Sir Herbert Samuel: New Science and Old Philosophy. What is Reality? The world in this generation is crying out for a philosophic basis for its thought. It will not find it except in a philosophy which builds with the materials brought to it by science. Science shows us aspects of the universe other than those of ordinary life: the aspect revealed by physical investigation and the psychic aspect. These must all the mutually consistent, since they represent the same world. Each of them presents reality within its own framework; for reality need not be something absolute and ultimate, but can be a system of relations. There may be, there probably are, other aspects of the universe besides those so far revealed; for neither our present physics nor our psychics give, or promise, any complete explanation. Science, Religion and Philosophy may redeem and raise mankind. **John Laird:** Great Thinkers. (VII) Malebranche. In so far as an elaborate philosophy can be summed up in a phrase, the epitome of Malebranche's is that " we see all things in God." His endeavor was to expound this Plotinian-Augustinian doctrine to the " new " or scientific world. Few expositors of a Christian philosophy have ever made a more profound and a more original synthesis than he. He was the Aquinas of the new world, and if he did not have quite Aquinas's stature, the reason why his philosophy did not and does have commanding position is that the wreckage of Aristotelianism seems easier to save than that of Cartesianism and that Malebranche was the last of the great Cartesians in so far as he was a Cartesian. **Herbert Dingle:** On the Principles Underlying Profesor Milne's Cosmological Theory. Mr. Dingle contributes to this issue of *Philosophy* a review of Prof. E. A. Milne's " Relativity, Gravitation, and World-

Structure". Milne postulates a cosmological principle according to which the universe is such that a number of observers in relative motion are possible whose views of it are on the whole indentical. The theory at present rests on what is described as an unsatisfactory basis. It is hoped that Milne will reform the foundation of his work so that it will appear in its true shape. **S. Atlas:** The Philosophy of Maimonides and Its Systematic Place in the History of Philosophy. Maimonides's importance is found in the fact that he modified the Aristotelian philosophy and by a novel method gave a new validity, in spite of his Aristotelianism, to the moral concept of God. He was one of those great spirits who, even though bound up with the general culture of their age and the nation of their origin, belong to the whole of mankind. **R. E. Stedman:** Sovereignty and the State. The state is society formally organized for the purpose of order by means of law. The state can claim a right to maintain peace and order only in such a manner as to permit the free pursuit of culture—of science, art, religion. Governments that claim the sovereign right to set at nought the consciences of their people come inevitably to rely upon the only remaining instruments of obedience, viz. force, torture, and terror. **Philosophical Survey:** Philosophy in France is discussed by S. V. Keeling: Some Recent Contributions on the Formation of Greek Thought. Philosophy in Germany is discussed by Helen Knight.

A CORRECTION

The following corrections are to be noted in the English translation of the review, written by its author in French, which was published in the January 1936 issue of THE NEW SCHOLASTICISM (Vol. X, No. 1, pp. 84-85).

P. 84, l. 19: For "did" read "died".

P. 84, l. 31: For "Etienne de Antoine Cauléas" read "Stephen and Anthony Cauleas".

P. 85, ll. 3-6: Read: "Father Hofmann cannot be reproached for not having been a prophet and for not having introduced into his collection any of the documents of the *dossier antiphotien*, (Mansi XVI, 409-457) with one exception".

P. 85, ll. 13-16: Read: ". . . has proved that falsifications made by Ignatians are of the same kind and weight as the falsifications of the Photian party. Now Father Hofmann's collection necessarily allows only the study of the latter, although his document number 13 is vitiated by the former."

P. 85, ll. 28-29: Read *post* and *ante* in place of "*after*" and "*before*".

Note 4: Read "858" for "658".

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